RESEARCH REPORT

Process Evaluation of the National Sanitation Campaign of Tanzania

Acknowledgements

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This project was funded by the UK Department for International Development through the SHARE (Sanitation Hygiene Applied Research for Equity) Consortium.

This material has been funded by UK aid from the Department for International Development (DFID). However, the views expressed do not necessarily reflect the Department's official policies.

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List of Acronyms

AfDB	African Development Bank
BCC	Behaviour Change Campaign
CI	Confidence Interval
CLTS	Community Led Total Sanitation
DEO	District Education Officer
DFID	Department for International Development
DHO	District Health Officer
EA	Enumeration Area
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HWF	Hand Washing Facilities
HWWS	Hand Washing with Soap
IQR	Interquartile Range
JMP	Joint Monitoring Programme for Water Supply and Sanitation by WHO and UNICEF
JSM	Joint Sector Meeting
LGA	Local Government Authority
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium Development Goal
MIS	Monitoring information System
MKUKUTA	National Strategy for Growth and Reduction of Poverty (NSGRP)
MoEVT	Ministry of Education and Vocational Training
MoHSW	Ministry of Health and Social Welfare
MoWII	Ministry of Water and Irrigation
NBS	National Bureau of Statistics
NIMR	National Institute for Medical Research
NSC	National Sanitation Campaign
NIMR	National Institute of Medical Research
ODF	Open Defecation Free
PTA	Parent Teacher Association
RCT	Randomised Controlled Trial
REO	Regional Education Officer
RHO	Regional Health Officer
RS	Regional Secretariat
SHARE	Sanitation and Hygiene Applied Research for Equity
SHC	School Health Club
SMC	School Management Committee
SWASH	School Water Sanitation and Hygiene
TOC	Theory of Change
TSSM	Total Sanitation and Sanitation Marketing
USD	United States Dollar
VIP	Ventilated Improved Pit
WASH	Water Sanitation and Hygiene
WHO	World Health Organization
WSDP	Water Sector Development Programme
WSP	Water and Sanitation Program

Executive Summary

Despite continuous financial efforts to improve the conditions in the country, Tanzania was off track to meet both the MDGs target on water and sanitation and the national MKUKUTA goals. Whilst the country reached a high level of latrine coverage (90%) during the *Mtu ni Afya* campaign of the 1970s, very little progress has been made since then to move the population up the sanitation ladder, from unimproved to improved latrines.

To address the poor health conditions in the country, in 2011 the Government of Tanzania embarked on a National Sanitation Campaign (NSC) under the Water Sector Development Programme (WSDP). Phase I of the Campaign (2011-2015) aimed to improve rural households with adequate water and sanitation facilities, using a combination of CLTS, social marketing and behaviour change communication, as well as providing schools with appropriate WASH conditions.

In 2013 the Sanitation, Hygiene Applied Research for Equity (SHARE) consortium was commissioned to design and implement a process evaluation of the National Sanitation Campaign (NSC). The process evaluation was conceptualised as a collaborative effort between the SHARE consortium and the government of Tanzania to monitor the mid-term achievements of the programme, at household and school level, and the main barriers and enabling aspects of the NSC implementation.

The study design and protocol were prepared by the SHARE consortium, in collaboration with the Ministry of Health and Social Welfare (MoHSW), the National Institute for Medical Research (NIMR) and the National Bureau of Statistics (NBS). The MoHSW coordinated the execution of data collection which took place between August-December 2014, in 14 Regions and 46 Districts; NIMR provided advice on interpretation of protocol and fieldwork execution, the NBS was responsible for study area selection and development of sampling methodology.

Results

Household Survey

The sample strategy was a two-stage design among 46 rural districts1 where the Campaign was implemented at the time of the evaluation within 14 regions of Tanzania. 552 enumeration areas were selected in the first stage using systematic random sampling, where selection probability was proportional to EA size based on the number of households. The second stage was a simple random sample of 8 households per EA, thus bringing the total target to 4,416 households. EA coverage was 96.7%, and household coverage was 92.2%.

Key Performance Indicators

Two key performance indicators were assessed using the household survey; the first being the number of households with improved latrines, and the second being the number of households with functional Hand Washing Facilities (HWFs). Overall, 1,093 households

[1] Original sample had mistakenly been drawn to include 48 districts, although only 46 were eligible at that time since the campaign had yet to be implemented in all districts.

(24.8%, 95% CI2: 21.5-28.4) were observed to have improved sanitation facilities, while functional HWFs were observed for 335 households (8.6%).

[2] CI: Confidence Interval.

Socio-demographics and characteristics of survey respondents

Responses to the household survey came from 4,071 participants, head of households or spouse of head of households, across 46 districts. The median age of respondents was 40 years old, with an interquartile range of 30-54. 1,922 respondents were male (weighted % = 49.2), while 2,149 were female (weighted % = 50.7). The majority of respondents were educated to primary level (67.4%), live in monogamous marriages (66.8%), and work in agriculture and/or livestock (82.4%). Median household size was 5 (IQR3: 4-7), and the median number of children under 5 per household was 1 (IQR: 0-2).

Community Conditions

61.03% of respondents (95% CI: 57.6-64.3) stated they had heard of the NSC in the past 6 months. Among these individuals, notable NSC information sources were community health workers (informing 44.7% of respondents), radio (informing 37.1% of respondents), and community events (informing 31.7% of respondents).

Exposure to media messaging was generally quite low, particularly for newspaper and television; 81.89% and 83.71% of respondents indicate that they never read the newspaper or watch television. On the other hand, radio exposure was fair; only 34.66% of respondents indicate they never listen to the radio, while 39.7% said they listen almost every day.

Involvement in community organisations was generally low. Respondents were most commonly members of village government and village CLTS (Community Led Total Sanitation) committees, although these only accounted for 3.4% and 1.9% of the population, respectively. Despite this, participation in sanitation and hygiene promotional meetings was markedly higher – 41.2% of respondents stated they or a family member had attended one of these meetings in the previous year.

Behavioural Determinants

Our sample population seem to have high expectations from improving or building new sanitation facilities; 86% of respondents agreed or strongly agreed that using or building an improved toilet is good for one's health, good for one's safety, and would save money. Furthermore, 82% of respondents stated that getting rid of diseases was one of the most important benefits from having an improved toilet.

It appears that having a clean, improved toilet is an important social norm for respondents of this survey; approximately 87% agreed or strongly agreed that one's neighbours having an improved toilet is important for one's own health, while approximately 97.3% agreed or strongly agreed that it is important to have a clean and safe toilet for visitors.

Respondents generally perceived diarrhoeal illness and inadequate sanitation as a threat. Approximately 50% of participants agreed or strongly agreed that: diarrhoea and poor sanitation are major health problems in their community; that people suffer from diarrhoea due to poor sanitation in their community; and that children are more susceptible to diarrhoea if they do not use an improved latrine.

[3] IQR: Interquartile Range

Opportunity

Respondents were divided on whether sanitation services were easily available in their community: 55% disagreed that building materials for sanitation facilities were easily available, while 58% and 61% agreed that sanitation providers and suitable sanitation facility types were easily available in their community.

It appears that open defecation is contrary to the social norms followed by the vast majority of participants. At least 93% of respondents disagreed that it is acceptable for children or adults to openly defecate, even when no toilet is available.

Ability

While it appears that most respondents would be unable to build their own improved latrine (only 16.7% of respondents had someone in their family with the required skills), the majority (60.6%) did know someone in their community capable of building an improved latrine. But, as 64% of respondents disagreed that they would be able to save enough money to build or improve their toilet, it appears that respondents' ability to improve their sanitation facilities is hindered more by affordability than by availability of construction skills.

Behavioural Outcomes

Sanitation

Improved sanitation4 facilities were observed in 24.8% of households (95% CI: 21.5-28.4). The most common facility type observed was a traditional pit latrine, which was found in 57.3% of households (95% CI: 54.5-60.1). Second to this, 17.7% of households (95% CI: 15.3-20.2) were found to have no sanitation facility at all.

Drinking water

34.8% of respondents (95% CI: 31.2-38.5) reported to use an improved drinking source, while the remaining 65.2% (95% CI: 61.5-68.8) used unimproved sources. Three water sources in particular were frequently reported as the household's primary water source: a public tap (24.1%, 95% CI: 21-27.5), an open well (19.7%, 95% CI: 16.9-22.8), and a river or stream (20.7%, 95% CI: 16.5-25.6). With regard to the total time required to collect water, 30.22% of all respondents (95% CI: 27.2-33.4) reported a total trip time of less than 15 minutes, while approximately 54.4% of respondents reported a return-trip time of 30 minutes or more.

WASH conditions: Handwashing

Functional HWFs were only observed in 8.6% of households. Although, after observing handwashing materials present at the handwashing site, this figure becomes even more alarming – only 3.7% of all respondents lived in a household observed to have a handwashing facility with both soap and water.

School WASH Component

Sanitation and Hygiene Conditions

[4] This Survey employed the JMP definition of Improved Sanitation facility: a facility that hygienically separates human excreta from human contact (http://www.wssinfo.org/definitions-methods/). The JMP identifies the following types of sanitation as improved: Flush toilet; Piped sewer system; Septic tank; Flush/pour flush to pit latrine; Ventilated improved pit latrine (VIP); Pit latrine with slab; Composting toilet.

[4] The survey employed the JMP definition of improved drinking-water source as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter (http://www.wssinfo.org/definitions-methods/). The following are considered improved drinking water sources: Piped water into dwelling; Piped water to yard/plot; Public tap or standpipe; Tubewell or borehole; Protected dug well; Protected spring; Rainwater.

In those areas where the NSC was conducted at household level, we purposively selected 84 schools, in the areas where the household survey took place. All surveyed schools had access to at least one toilet facility, though there was inadequate information on the functionality of these toilets at the time of the visits. Data at School level were collected through interviews with head teachers. The most common type of toilet facility used in the schools was the ventilated improved pit latrine (VIP) (53%) and the least was the traditional pit latrine (3%).

Half the schools surveyed satisfied the MoHSW guidelines standard for student to male toilet compartment ratio of 1:50 boys, whilst only 43% of schools satisfied the ratio 1:40 girls. Less than half of the schools (44%) made provision of male urinals. In addition, only 37% of the schools reported to regularly provide anal cleansing materials for students. The majority of schools (74%) had no facilities accessible to learners with physical disabilities.

Although more than half (59%) of schools surveyed were reported to have clean toilets, a far higher number (95%) reported the smell within the toilets and (88%) reported that the school's toilet pits were full at the time of the survey.

The study found that 66% of the schools had a functional water supply system, though only 53% had a regular supply throughout the year. The most common source of water supply was the tube well/borehole (20%),

Of the 70 schools surveyed, more than half (52.9%) had one or more hand washing stations with an average number of six. On average, there was a higher number of boys (77) than girls (65) per every functional hand washing station exclusive for boys and girls. The most common type of HWF in the schools was the tippy tap (83%). Of the schools that had hand washing stations, the majority of these were functional for both boys (91%) and girls (88%). Although HWFs were available in the majority of schools, only 54% of schools reported to have water available at the HWFs and 35% to have soap available for students.

Schools Enabling Environment

Over 80% of schools reported to have an active School Health Club (SHC) at the time of the survey, with an average membership of 33 learners. Less than half (47%) school health clubs were reported to meet once a week, whilst 21% reported to meet monthly and 16% only few times within a year (Table 6-6). The main activities conducted in the SHC were: latrine cleaning (53%) or promoting good hygiene behaviour and practices through art, drama and/or poetry either in the schools (63%) or in the community (40%).

In the majority of these (67%), the SMC was engaged mainly in mobilising the community for WASH activities, or managing finance allocated for school WASH. Teachers were also engaged in a number of WASH activities, with the most commonly reported ones being teaching hygiene education (80%), organising the cleaning of latrines (74%) and preparing duty rosters for students for WASH activities (67%).

The NSC Enabling Environment

The enabling environment of the NSC was assessed through a triangulation of sources: the MoHSW Quarterly Monitoring reports, the Aide Memoires of the Water Sector Development Programme (WSDP) Joint Supervision Meetings and structured interviews with key informants

at regional and district level (Regional Health Officers, District Health Officers, Regional Education Officers and District Education Officers). The reporting period covered by this analysis is from May 2012 until December 2014, which corresponds to the timeline during which the process evaluation was conducted.

Despite the progress achieved in Phase I, the evaluation of the Campaign's enabling environment, through internal progress reports from MoHSW and Monitoring documents from the WSDP, highlights critical challenges in achieving a cost-effective implementation of the NSC. Among the most important issues experienced in Phase I were: the poor financial flow system within the existing structure, which caused delays in disbursement of funds and their transfer to regions and districts for implementing the campaign.

Other critical hurdles identified related to the poor quality of the monitoring and reporting mechanisms at regional and district level. Monitoring reports were submitted to MoHSW with significant delays and were often of poor quality, raising uncertainty on the validity of the output data gathered in Phase I. Lack of incentives and resources for the monitoring process at village level was suggested to be the most frequent causes of delays.

Furthermore, due to delays in the national procurement system, the planned Behaviour Change Communication component did not take place in Phase I, potentially reducing the efficacy and effectiveness of the Campaign.

Conclusions

This process evaluation provided a comprehensive and representative overview of the prevalent WASH conditions and behavioural determinants in the target population during Phase I and highlighted the main barriers which affected implementation. The results gathered have generated critical assumptions to be tested in Phase II of the Campaign and suggested recommendations for improvement. Nonetheless, due to the type of evaluation design adopted, the findings cannot be exclusively attributed to the NSC activities.

The evaluation was a useful exercise as it fully engaged the National Sanitation Campaign implementers at central level through direct participation in data collection and interpretation, enabling in depth understanding of the key issues at grassroots level. Furthermore, the evaluation provides the opportunity for creating a system for on-going evaluation of the programme, allowing to test and document the effectiveness of the planned adjustments, which emerged from the study.

Introduction

Despite continuous financial efforts to improve the living conditions in the country, Tanzania is off track to meet both the MDGs target on water and sanitation and the National Strategy for Growth and Poverty Reduction (Ministry of Finance and Economic Affairs, 2010). Whilst the country reached a high level of latrine coverage (90%) during the Mtu ni Afya campaign of the 1970s, very little progress has been made since then to move the population up the sanitation ladder, from unimproved to improved latrines.

According to the final Joint Monitoring Programme (JMP) Report on the MDGs, a result 94% of the population still uses unimproved sanitation facilities (these include also shared sanitation and open defecation) and 47% does not have improved drinking water sources (WHO/UNICEF, 2015). These statistics reveal a more alarming scenario when analysed in the context of population distribution in the country. Despite Tanzania's high rate of urbanisation, 74% of the population is rural. According to the JMP (WHO/UNICEF, 2015), the prevalence of Open Defecation (OD) in urban areas has remained stable at 2% (1990–2015), but the practice has increased from 10% to 17% in rural areas Similarly, the proportion of population without improved latrines in 2015 is significantly higher in rural areas, with 71% of the population remaining unserved.

Hygienic conditions are also very poor in the country. The 2011/12 Tanzania Household Budget Survey reports that only one household out of ten has HWFs near to their latrine or kitchen and 28% of households do not have appropriate ways to dispose of children's stool. A baseline survey (MUHAS, 2009) of sanitation and handwashing behaviour of 1,500 households in five rural districts of Tanzania reported very poor hygienic conditions, with only 34% of the respondents reporting to wash their hands during at least one critical moments: 21.2% after using toilet, 12.5% during cooking or preparation of food, 9.7% feeding children and 9.1% cleansing children's bottom. Similar results were found by a cross-sectional study TMS (2006) in Dar es Salaam, Rufiji, and Mpwapwa, and focusing primarily on handwashing behaviour of caregivers and children reported similar results, where only 44% of the households interviewed reported using soap to wash their hands before and after different activities, such as visiting toilets, feeding, cleaning their children.

The most recent statistics on the WASH conditions in Tanzanian schools, based on data pooled from different sources, report a critical scenario. Approximately 40% of schools have no water supply, 84% have no functional HWFs and on average there is one latrine available every 56 pupils. The increase in school enrolment after the abolition of school fees, generated further strain on already inadequate school WASH infrastructures (UNICEF). Conditions are particularly poor in urban areas, with the city of Dar es Salaam, presenting a ratio of 215 male pupils per latrine and 187 female pupils per latrine. According to the School WASH mapping exercise undertaken in 2006 by The Ministry of Education and Vocational Training (MoEVT) in collaboration with SNV and UNICEF in 16 districts of the country, the conditions in primary schools of Tanzania are inappropriate to generate a conducive learning environment. In line with national statistics, the mapping exercise identified a ratio pit latrine to pupil equal 1 to 53.

Furthermore, although 62% of sampled schools had an improved source of drinking water, 48% of these are not functional. Similar results were found in a more recent study conducted in Schools in the regions of Mbeya, Iringa, and Njombe. (Brombacher et al. 2014). Of the 48 schools that had at least some water source, 33 were reported to be only partially working and 6 reported no functionality. The majority (94%) of schools had pit latrines, and none of the schools had toilet paper. HWFs were found in half of the schools (n=30) whereas only 4 schools in Mbeya had a handwashing station, while Iringa and Njombe had 11 and 15 respectively. Very few schools had soap or ash available. With reference to latrines for disabled and pre-primary children, the study reported lack of facilities for disabled and pre-school children in 62 % and 97% of the schools respectively.

Although Tanzania has made great progress with under 5 mortality rates, diarrhoeal diseases caused by poor water, sanitation and hygienic conditions remain one of the leading cause of morbidity and mortality among children under the age of 5. The most recent DHS survey reports a diarrhoeal prevalence of 15% and a severe diarrhoea prevalence of 2% among children under the age of 5 (DHS, 2010).

There exists a body of evidence that inadequate water, sanitation and hygiene (WASH) conditions contribute to infectious diarrhoea (DFID, 2013). Systematic reviews and meta-analysis have reported that Handwashing with Soap (HWWS) reduces the risk of diarrhoea by a range between 37%-48% and provides a mean 35% reduction with water treatment (Curtis and Cairncross 2003; Fewtrell et al. 2005, Cairncross et al. 2010). Similarly, a systematic review of the health and educational outcomes of adequate water and sanitation facilities in 41 schools reported an association between adequate WASH and reduction of diarrhoeal diseases (Jasper et al. 2012). Furthermore, RCT conducted in Kenya reported that an appropriate SWASH environment increases female attendance by 58% (Freeman et al. 2012).

Tanzania has one of highest stunting prevalence in Sub-Saharan Africa. According to the most recent DHS (2010), 42% of children under 5 are stunted, of which 17% are severely stunted. Undernutrition presents several long-term consequences, among which high mortality is the most severe (Victora et al. 2003). Other significant effects include short adult height, low birth weight, impaired cognitive, motor and social development (Grantham-McGregor et al., 2007) and reduced economic productivity (Black et al. 2008; Black et al. 2013). Furthermore, Victora et al. (2010) shows that the loss of linear growth caused by malnutrition begins during pregnancy and continues, irreversibly, until approximately the child's second year of age.
There is growing evidence that lack of adequate sanitation facilities contributes to high levels of stunting among children under the age of 5. A systematic review by Dangour et al. (2013) of 14 studies on WASH interventions conducted in 10 low and middle income countries reported a borderline statistically significant effect of water and hygiene interventions on stunting5 (mean difference 0.1; 95 % CI 0 to 0.2) in children under the age of 5 and no effect for wasting. The interventions included in the meta-analyses were solar disinfection of water, provision of soap for handwashing and improvement of water quality but not sanitation or water supply.

[5] Undernutrition is expressed through the anthropometric measures of stunting (height for age <-2 SD; < -3SD for severe stunting); wasting (weight for height < 2SD) and underweight (weight for age <-2 SD), as well as deficiencies in essential vitamins and minerals.

To address the public health threat posed by poor WASH conditions in the country, a National Sanitation Campaign (NSC) was developed under component II of the Water Sector Development program (WSDP). The NSC, launched in 2012, aimed to provide 1.52 million households with improved sanitation and 812 schools with adequate WASH facilities by 2015. The Campaign is coordinated by the Ministry of Health and Social Welfare (MoHSW) and involves NGOs, the private sector and other government ministries, among which the Ministry of Education and Vocational Training (MoEVT), the Ministry of Water (MoWI) and PMO-RALG. To maximise the effectiveness of and value for money of the NSC, in 2013 the Department for International Development (DFID) in Tanzania and the World Bank/WSP commissioned the Sanitation and Hygiene Applied Research Consortium (SHARE) to design and execute a process evaluation of the Phase I of the National Sanitation Campaign to monitor its progress towards the set goals. The process evaluation is conceptualised as a collaborative effort between SHARE and the Government of Tanzania to monitor the mid-term achievements of the programme, at household and school level.

The primary objective of the process evaluation was to assess whether the National Sanitation Campaign is likely to catalyse the expected changes at household and school levels. Furthermore, the evaluation aimed to assess the enabling environment and the level of unit costs spent to identify potential strategies or steps that have been or could be taken to increase the programme's efficiency and effectiveness. The evaluation was characterised by three main components: a) a household survey, b) school WASH survey and c) evaluation of the enabling environment and of the costs necessary to achieve expected results.

This report provides the results of the process evaluation conducted from July 2013 to December 2014, highlighting the main outputs achieved and the key constraints met by the government and NGOs in implementing the first Phase of the Campaign.

1. The National Sanitation Campaign in Tanzania

The National Sanitation Campaign (NSC) is a four-year programme (2011-2015) falling within the rural water supply and sanitation component of the Water Sector Development Programme (WSDP) (See Annex I for a list of the WSDP components). The WSDP has adopted a sector wide approach programme, which incorporates all activities undertaken in the water sector in Tanzania, funded by development partners and the government of Tanzania. The programme is implemented by the MoWI, the MoHSW, the PMO-RALG and other implementing agencies.

The WSDP began implementation in 2007 with an initial total budget of USD 951 million which was increased to 1, 240 million USD. The National Sanitation Campaign (NSC) is part of the WSDP Component 2: Scaling up rural water supply and sanitation. This component provides support to LGAs for:

a) Rural WSS investments (USD 348.5 million),
b) Management (USD 37.5 million) and
c) Sanitation and Hygiene (USD 23.9 million), financed by the African Development Bank (AfDB) and the UK Department for International Development (DFID).

The National Sanitation Campaign (NSC) is characterised by two phases: Phase I (2011-2015) focused on improving sanitation and hygiene conditions on households and schools in rural areas, whilst the Phase II, to be starting, will expand to urban areas and public spaces such as hospitals, health care centres.

Due to delays in disbursement of funds to Regional Secretariats (RSs) and Local Government Authorities (LGAs), the implementation of Phase I of the NSC began in January 2013 in 42 LGAs from 14 Regions. Progressively, 70 new LGAs were added to make a total of 112 implementing LGAs. In the financial year 2013/14, 156 LGAs in the mainland Tanzania were fully engaged in the implementation of the campaign. As reported in its concept note (See Annex II), the National Sanitation Campaign aims to stimulate demand for sanitation and improve supply through a combination of Community Led Total Sanitation (CLTS) and Sanitation Marketing through use of the following techniques:

- Clear and consistent messages to generate behaviour change: development of concepts and messages that have been developed and pre-tested in Tanzania. Messaging and concepts are tailored to the specific gender and age groups who control the actions needed to achieve program objectives.
- Engagement of Households and Communities – CLTS triggering and follow-up: CLTS seeks to stimulate demand for sanitation and allows communities to determine whether or not to improve their WASH conditions.
- Engagement of Masons and Suppliers. The program aims at training existing village *fundis* in upgrading latrines, handwashing facilities (HWFs), as well as in sales and business development skills.

- Improvement of sanitation infrastructures, instalment of HWFs and hygiene promotion in schools. Children would be engaged in setting up and maintaining school HWFs and in constructing tippy taps for home as well as promoting hand washing with soap at key times. In addition, the programme would improve school sanitation facilities in target communities based on ongoing school water, sanitation, and hygiene (WASH) mapping exercises and national guidelines currently under development.
- Experiential events – recognition and reinforcement: To further motivate uptake of improved WASH facilities, marketing events would be held in programme's areas. These provide a mix of entertainment and education and provide a platform to promote full community coverage of sanitation, proper latrine use and maintenance, sales pitches for masons, testimonials from households on benefits, and recognition of well performing communities, schools, and individuals.
- Radio programmes at national level: Radio programming to deliver sanitation and hygiene messages through dramas/soap operas, short spots, testimonials from national figures, and DJs.

In Phase I, the NSC aims to achieve the following results:

- 1.3 million households with improved sanitation facilities
- 812 schools with access to improved sanitation and hygiene facilities
- 600 villages with signed Open Defecation Free (ODF) declarations and deadlines to improve household sanitation and hygiene
- 600 villages served by local service providers in their respective areas

1.1 Key Stakeholders and Institutional Arrangements

The design, implementation and monitoring of the National Sanitation Campaign (NSC) involves central government ministries, regional secretariats (RS), local government authorities (LGAs) as well as NGOs. Table 1-1 below summarises the key roles and responsibilities allocated in the Campaign.

Table 1-1: NSC institutional arrangements

Institutions	Allocated Responsibility
Ministry of Health and Social Welfare	Coordination of the sanitation and hygiene sub-component at household level Production and distribution of training materials Budget transfers to LGAs National Monitoring and Evaluation
Ministry of Education and Vocational Training	Coordination of SWASH sub-component School Infrastructure upgrading and promotion
Ministry of Water and Irrigation	Coordination of water supply component
PMO-RALG	LGA budget expenditure supervision
Local Governments	CLTS training and triggering Mason training School hygiene promotion Monitoring and supervision

NGOs	Channel promotional materials and activities
Development Partners	Financing, technical assistance, coordination assistance
Marketing Agency	Development of promotional messages and Concepts Experiential events Media production and placement Promotion materials Pre-testing Mason sales support

In order to track progress of the Campaign the following monitoring structure was provided:

1. At National level, the monitoring of the NSC is conducted by a Joint Mission, which includes members from the Ministry of Health and Social Welfare (MoHSW), the Ministry of Water (MoWI), the Ministry of Education and Vocational Training (MoEVT), PMO-RALG and other development partners supporting WASH activities in the country.Sector Ministries are also responsible to oversee the implementation of the NSC in Regions and LGAs and periodic follow up to ensure that the effective management of sanitation and hygiene funds in the Regions and Councils is maintained.
2. In the Regions, monitoring is conducted by the Regional Secretariats. Regional Secretariats conduct quarterly follow-up supervision in LGAs and facilitate meetings to monitor progress made by LGAs.
3. In LGAs monitoring is conducted in wards and villages/mtaa to assess progress made in the implementation of the NSC.

Table 1-2 Monitoring arrangements of the NSC

INSTITUTION	ROLES
MoHSW. MoWI, MoEVT, PMO-RALG, DPs	Coordinate joint supervision missions in RS and LGAS; Facilitate planning and budgeting of NSC activities; Compile and submit technical and financial report to Management; Technical Working Groups (TWGs); National S&H Steering Committee.
RS	Conduct follow up supervisions in LGAs Facilitate experience learning sessions Compile and submit to PMO-RALG quarterly financial and technical implementation reports; and copies to sectorial ministries.
LGAs	Monitor progress at wards; villages/mtaa; sub villages level Prepare and submit to RS quarterly financial and technical implementation reports

1.2 Funds for the National Sanitation Campaign

The National Sanitation Campaign is funded by the African Development Bank (AfDB) and the Department for International Development (DFID). A total of 24 billion USD were committed to the rural household and school WASH component of Phase I of the Campaign. Other earmarked funders include WSP/UNICEF/ GIZ.

Table 1-3: Source of funds of the NSC

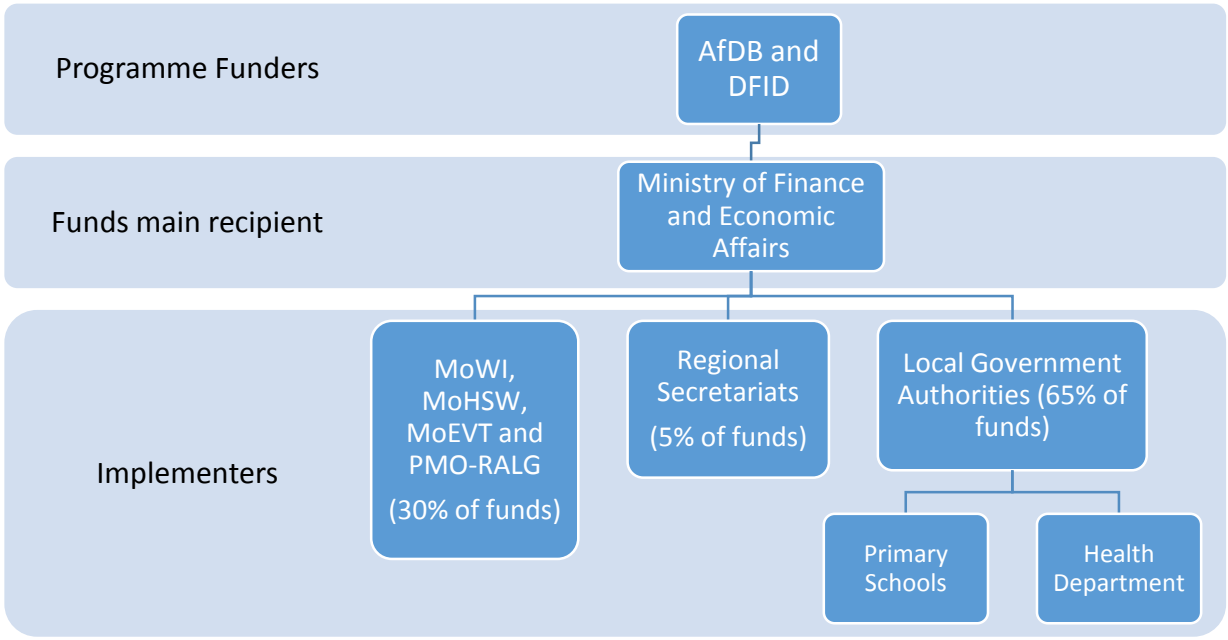
Activity	2010 – 2011	2011 – 2012	2012-2013	2013-2014	2014-2015	Total
Cost per household targeted (USD)	0	10	10	10	10	
Number of Households targeted	0	100,000	435,000	576,000	464,500	1,575,500
Sub-total for Household (USD)	0	1,000,000	4,350,000	5,760,000	4,645,000	15,755,000
Cost per School targeted (USD)	0	10,000	10,000	10,000	10,000	
Number of school targeted	0	88	231	305	188	812
Sub-total for School WASH (USD)	0	880,000	2,310,000	3,050,000	1,880,000	8,120,000
Grand Total (USD)		1,880,000	4,750,000	7,630,000	5,740,000	23,875,000

The funds are directed to the Ministry of Finance and Economic Affairs, which in turn has the responsibility to disburse them to the Ministry of Water (MoWI); Ministry of Health and Social Welfare (MoHSW); Ministry of Education and Vocational Training (MoEVT); and Prime Minister's Office – Regional Administration and Local Government (PMO-RALG) for the implementation of different sub components of component 4 (Rural Water Supply and Sanitation) of the WSDP.

The Ministry of Water (MoWI) receives funds for the implementation of component 4 (Rural Water Supply) of the WSDP to ensure the availability of clean and safe water in the Campaign areas.

Funds for the implementation of the household sanitation and hygiene sub components, which are coordinated by the Ministry of Health and Social Welfare, are proportionally segmented and channelled to MoHSW headquarters; RS and LGAs. Similarly, funds for the implementation of the School Sanitation and Hygiene (SWASH) sub-component- managed by the Ministry of Education and Vocational Training- are proportionally segmented and channelled to MoEVT headquarters; RS; and the LGAs which further direct the funds proportionally to the selected primary schools for rehabilitation/maintenance of primary school sanitation facilities and keep some for follow up and monitoring. At RS and LGA level funds are received and expenditure reported through Water Account managed by department of Water. Funds are also sent to the Prime Minister's Office – Regional Administration and Local Government (PMO-RALG) for monitoring purposes.

Organogram 1: NSC fund flow



2. The Process Evaluation of the NSC

The process evaluation is conceptualised as a collaborative effort between SHARE and the government of Tanzania to monitor the mid-term achievements of the programme, at household and school level. The study design and protocol were prepared by the SHARE team in collaboration with the MoHSW, NIMR and NBS. The MoHSW coordinated the execution of the evaluation on the ground, NIMR was the main advisor on interpretation of protocol and execution of field plans, NBS was responsible for study area selection and development of sampling methodology. Finally, DFID and the World Bank (WSP) provided technical inputs to interpret results of the evaluation to the project.

Table 2-1, below, provides a summary of the main roles and responsibility in conducting the process evaluation.

Table 2-1: Roles in the Process evaluation of the National Sanitation Campaign

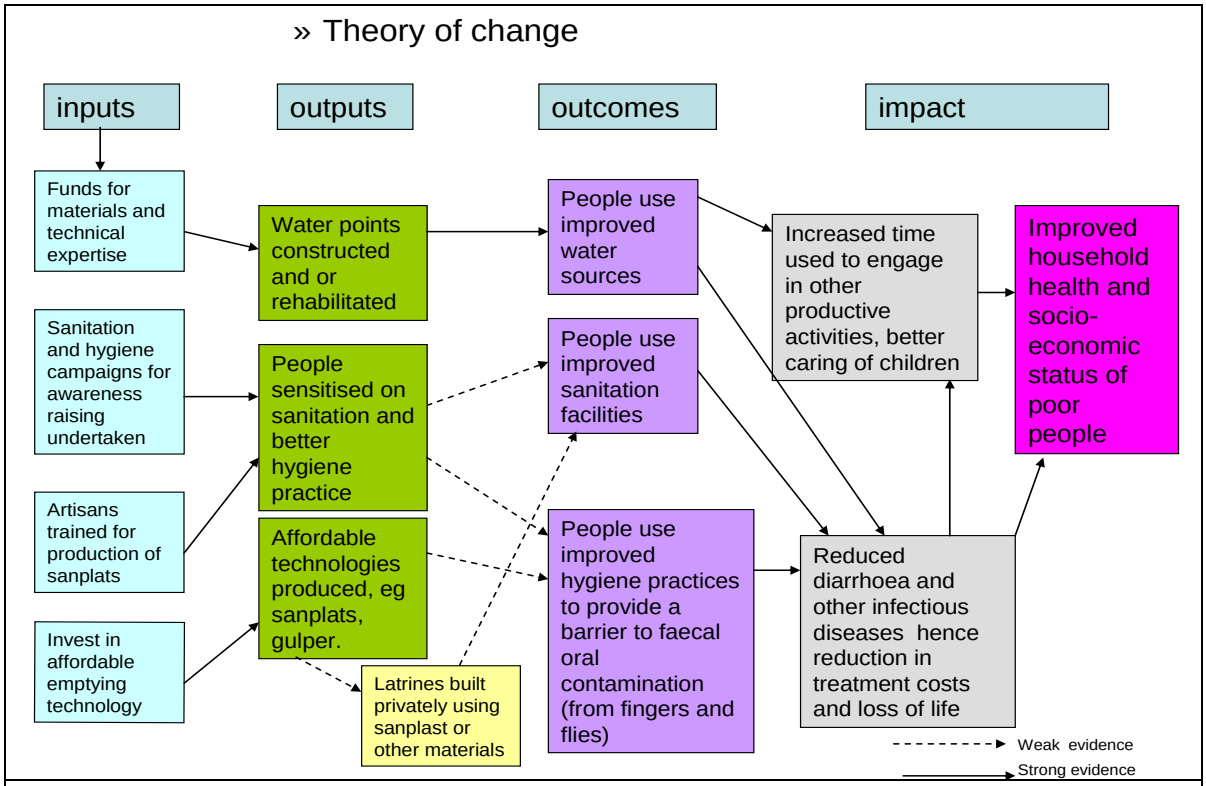
Activity	Responsibility
Study Design	SHARE
Questionnaires design	SHARE in consultation with MoHSW, MoEVT, NIMR
Sampling methodology	National Bureau of Statistics
Training of enumerators	NBS, NIMR and MoHSW
Piloting and Data collection	MoHSW, MoEVT
Data cleaning and analysis	SHARE with support from NIMR
Interpretation and reporting	SHARE

The study design began in July 2013, whilst the data collection took place a year later, from August to December 2014, due to delays in disbursement of funds. Data cleaning was conducted by LSHTM staff, in cooperation with a statistician from NIMR and took place in Dar es Salaam from January to April 2015, and data analysis was conducted by LSHTM Staff in London from April to July 2015.

The NSC evaluation protocol received ethical approval from the National Institute for Medical Research (NIMR), with Ref: NIMR/HQ/R.8a/Vol.IX/1744 on 16th June 2014.

2.1 Process Evaluation Conceptual Model

The Theory of Change for the NSC (Figure 2-1) is outlined in the business case for the Water Sector Development Programme and other programmatic documents.



Key assumptions:

- Households change their behaviour as a result of sanitation and hygiene campaigns.
- Households can afford to construct / upgrade their sanitation facilities.
- Funds are made available for the purpose intended.
- Funds are used for the purpose intended.
- Funds are used where there is need – i.e. communities without access rather than communities that already have access.
- Local Government Authorities have the capacity to manage the inputs and deliver outputs on water supply and sanitation and hygiene.
- The private sector has the capacity to construct and rehabilitate water points.
- Communities are able to operate and maintain the improved water supply.
- There is a strong system for monitoring and challenge through Civil Society Organisations.

Figure 2-2-1 – Water Sector Development Programme Theory of Change

In addition to laying out the basic results chain, the model also identifies specific assumptions upon which it is dependent and links for which there is limited or week evidence. One of the key assumptions is that sanitation promotion and supply improvement activities will be sufficient to trigger households to upgrade their toilets to improved status and that all community members will use the sanitation and hygiene facilities.

The existing applied research and programmatic literature suggests that this relationship can be complicated. It is widely recognised that sanitation marketing approaches (including promotional campaign, CLTS among others) stimulate demand for sanitation adoption in low-

income settings (Cairncross, 2010; Jenkins and Cairncross, 2010). Academic works on social marketing emphasize the intrinsic link between theory and practice in identifying the key determinants of recipient decision-making process to adopt sanitation systems. Jenkins and Scott (2007) for instance modelled recipients' decisions to adopt improved sanitation in Ghana, based on the concepts of user preference, intention and choice. The authors identify the important role played by constraints in the decision-making process of recipients, with a lack of perceived constraints acting as a strengthening aspect of decision. Similarly, the FOAM framework outlines the importance of focusing on Opportunity, Ability and Motivation in the implementation of hand-washing and sanitation behaviour change programmes (Jenkins and Scott, 2007; Coombes and Devine, 2010). Drawing on existing applied research literature (Devine, 2009; Cairncross, 2010; Jenkins and Cairncross, 2010) and on behaviour change theories (Kema et al., 2012) we have developed a framework for evaluating determinants (enabling factors and constraints) in the uptake of sanitation. Figure 2-2 identifies a number of the critical behavioural determinants within the literature.

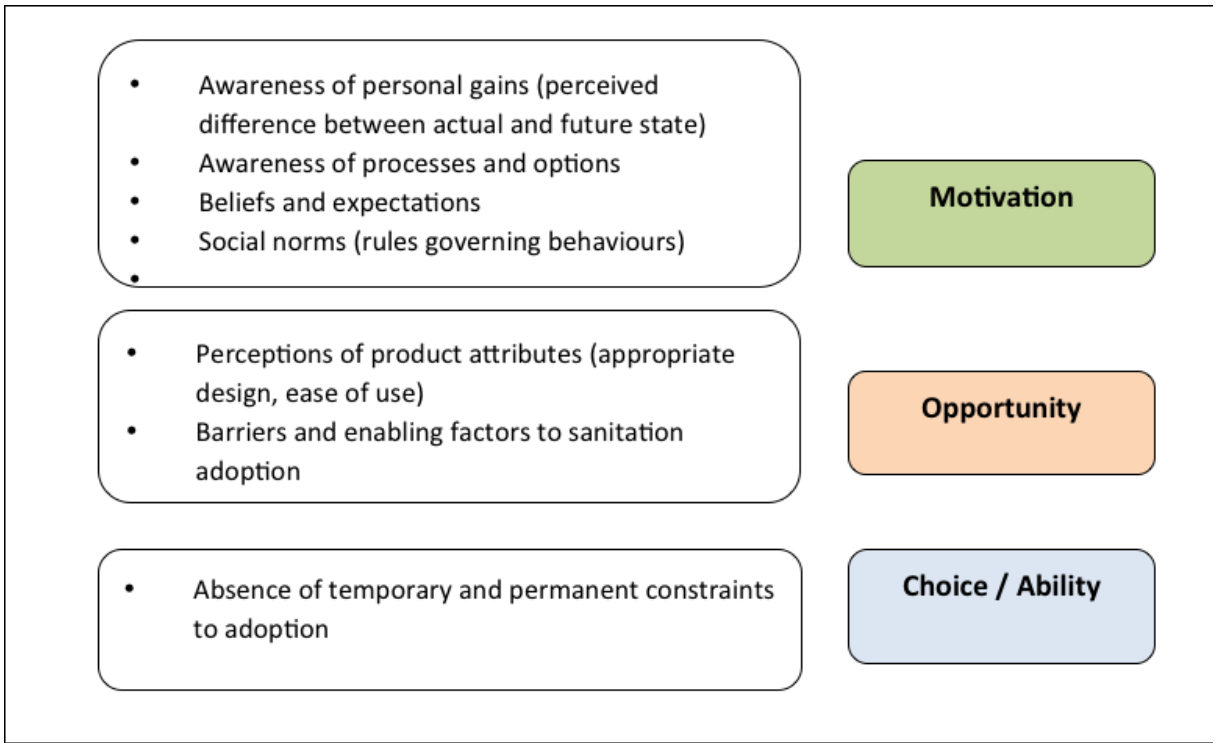


Figure 2-2-2 – Determinants of sanitation uptake.
Adapted from Jenkins and Scott, 2007 and Devine, 2009

Motivation: This component is characterised by stakeholders' understanding and awareness of options and benefits linked to having an improved sanitation system; together with dissatisfaction with current sanitation situation (Jenkins and Cairncross, 2010). Furthermore, the expected benefits of having an improved sanitation system will be explored. Example of questions explored in this section:

- Description of current sanitation system
- Satisfaction with current sanitation system
- Awareness of available sanitation options
- Expected benefits of having an improved sanitation system

Opportunity: This component refers to people's perceptions of improved sanitation as well as the availability of appropriate channels for sanitation adoption (campaign's promotional messages and events, appropriate infrastructures, availability of masons). This will involve an analysis of the promotion messages and channels used to understand how much coverage was achieved.

Choice / Ability: This indicator relates to the households' ability to use and control the opportunities to adopt sanitation (Jenkins and Cairncross, 2010), which depends upon the absence of temporary and permanent constraints to the adoption of sanitation facilities. These involve:

- Ability to save up for sanitation and actual cost
- Space and site of the sanitation
- Soil conditions
- Water table

From an evaluation perspective, exploring an individual's choice process to understand the steps and conditions needed to reach an adoption decision will be extremely useful. The identification of determinants in the decision process that enable or constrain sanitation adoption will be used to design external policies to reduce or eliminate them.

Social context and sanitation uptake: In addition to these behavioural determinants, decision-making is likely to be influenced by broader social dynamics. This includes the households' economic status, the extent social networking and communication about sanitation, and intra-household decision-making (including empowerment of women).

Programmatic Indicators: A recent report by Jimenez and Mtango (2014) assessed the extent of implementation of the NSC in the 6 of the 42 pilot districts. The evaluation identified a series of potential barriers and challenges in the implementation of the NSC. This includes low attendance at triggering events, lack of formation of community action plans, lack of follow up meetings by the CLTS committee, and lack of masons actively producing and selling in the community. Within the context of the programme framework outlined above, these can be seen as relating to critical assumptions. Specifically, that programme activities will be sufficient to generate the community level conditions that are considered necessary.

2.1.1 Household sanitation and hygiene

The overarching objective of this evaluation is to rigorously assess the implementation of the National Sanitation Campaign and whether this implementation is likely to catalyse the expected changes in the results chain (i.e. create the needed impacts).

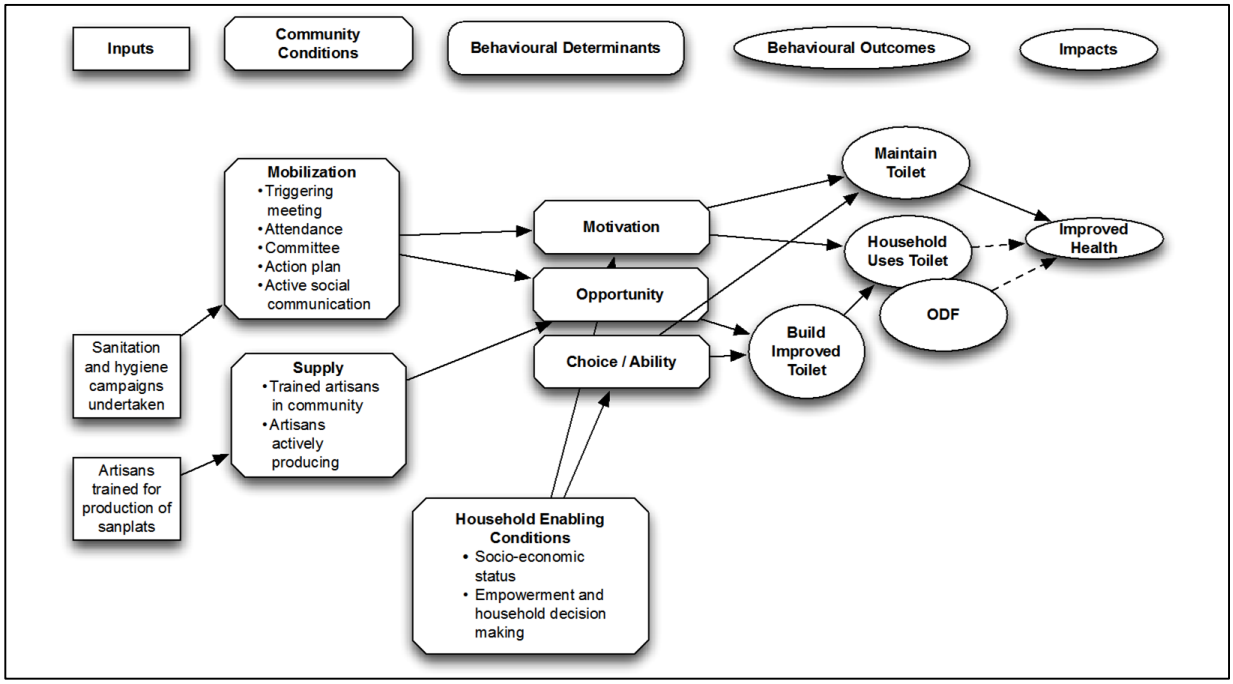


Figure 2-2-3 – Integrated conceptual framework for the NSC household sanitation

The results chain is at the centre of this evaluation. Figure 2-3 shows a conceptual framework of the results chain for the household sanitation portion of the NSC that integrates elements from the log frame for the NSC, the business case for the Water Sector Development Programme, and existing literature. In this framework a series of programmatic activities influence a set of supply and demand conditions that determine the uptake of new sanitation and hygiene behaviours. These behaviours are then expected to result in improvements in health and development.

At each stage in this results chain a series of assumptions are made about whether changes move through this causal chain. Many of the assumptions are identified in foundational programme documents. Others are based the existing evidence of the likely determinants of household sanitation behaviour change. Others still come from evaluations and of the TSSM programme of WSP and the NSC.

The approach proposed here is a theory-driven evaluation design (Chem and Rossi, 1989; Van Belle et al., 2010). In this context the results chain represents the programme theory, which can be treated as a hypothesis to be tested in the evaluation. In this framework we can break down the evaluation into two major components. The first element is an evaluation of the action model or the actual implementation of the programme as designed. This is predominantly the left hand side of the conceptual model and focuses on whether implementation activities are occurring and whether they are reaching the target population.

The second element is the change model that focuses on whether proper implementation actually results in the expected changes in behaviour and impact. Evaluating the change model

includes assessing whether changes in outcomes are occurring, but also whether critical intermediate conditions are in place and whether critical assumptions are in fact true. This includes for example whether promotion activities are sufficient to influence social norms and change behaviours; whether target populations are able to afford improvements sanitation infrastructure; and whether those targeted in promotion are in control of decisions regarding sanitation upgrading. One of the values of evaluating the change model is to identify ways in which the programmatic approach might be refined or changed to adjust to new insights in what is necessary to create the intended results.
The proposed approach also draws heavily on the realist evaluation literature (Pawson and Tilley, 1997) that focuses on how context influences the functioning of the action model and the change model. That is, attempts to understand what works where and why.

The evaluation sought to answer the following questions:

Action model evaluation

- Has the NSC selected target areas to balance needs and efficiency?
- Have improvements in service provider capacity resulted in the availability of appropriate options to households within target areas?
- Has training in sanitation training been targeted and has it resulted in promotion activities in target areas?
- What factors affect the progress of implementation in different settings (barriers and facilitators)?

Change model evaluation

Outcomes

- What is the prevalence of improved toilets, HWFs in households?
- What is the prevalence of appropriate behaviours of latrine use, hand washing, child faeces disposal, and food hygiene?
- What is the prevalence of recent (last 12 months) upgrading of sanitation facilities?
- What is the prevalence of intent to make sanitation infrastructure improvements (planning, saving, or starting construction)?
- What individual, household and community characteristics influence sanitation and hygiene outcomes?

Determinants

- Have NSC activities been sufficient to create motivation to improve household sanitation?
- Have NSC activities been sufficient to make improved sanitation construction accessible and available to households?
- Are improvements in sanitation affordable to households?
- Do promotion and supply improvements reach the poorest households?
- Do individuals with adequate motivation to improve household sanitation have control over decisions to do so?
- Do household decision making dynamics and gender roles constrain sanitation improvements?
- Is there evidence of social learning and social network activity supporting the creation norms for improved sanitation and changes in behaviour?

- How do hypothesized determinants of sanitation and hygiene behaviour change predict actual changes in behaviour outcomes?
- What individual, household and community characteristics influence behaviour?

2.1.2 School WASH

The second component of the NSC is the provision of improved latrines and hygienic conditions in primary schools of rural Tanzania. There is growing evidence that improvements in school WASH can improve both child health and educational outcome (Freeman et al, 2012; Freeman et al., 2013). However the same research suggests that the benefits can be extremely heterogeneous (Freeman et al. 2012) and depend on the extent to which interventions ensure basic inputs such soap, water or tissue for post-defecation cleaning, and materials for latrine cleaning (McMahon et al., 2011; Greene et al. 2012; Saboori et al. 2013). It is also apparent that the success in sustaining these elements is dependent up ensuring an enabling environment that includes funding, adequate supply chain, clear roles and responsibilities, monitoring and accountability, and technical feasibility (Saboori et al. 2011).
Figure 2-4 illustrates the conceptual model of the school WASH component of the NSC evaluation. It is based on a combination of the programme documents and the existing literature on what makes effective school WASH. The intended impact of improved health and education is dependent on a combination of reduced exposures to pathogens and improved quality of basic services (e.g. more desirable latrines). Reduced exposures are dependent on two critical child behaviours (hand washing with soap and use of toilets), along with a safe physical environment. This physical environment includes sufficient clean latrines, hand washing with soap facilities, and culturally appropriate materials for post-defecation cleaning. Children's behaviour change is dependent upon both active hygiene promotion and the availability of desirable sanitation and hygiene facilities. Lastly, these critical conditions for impact assumed to be dependent up a set of enabling conditions at the school level and above. These include adequate water for cleaning and hand washing, availability of recurrent costs for consumables such as soap and repairs, clear roles and responsibilities for regular tasks, a system of monitoring and accountability, and active school health clubs.
Key NSC activities of teacher training, latrine construction, and community sensitization are designed to create some of these enabling and environmental conditions. However it is likely that success is dependent in part on whether the other enabling conditions are in place.

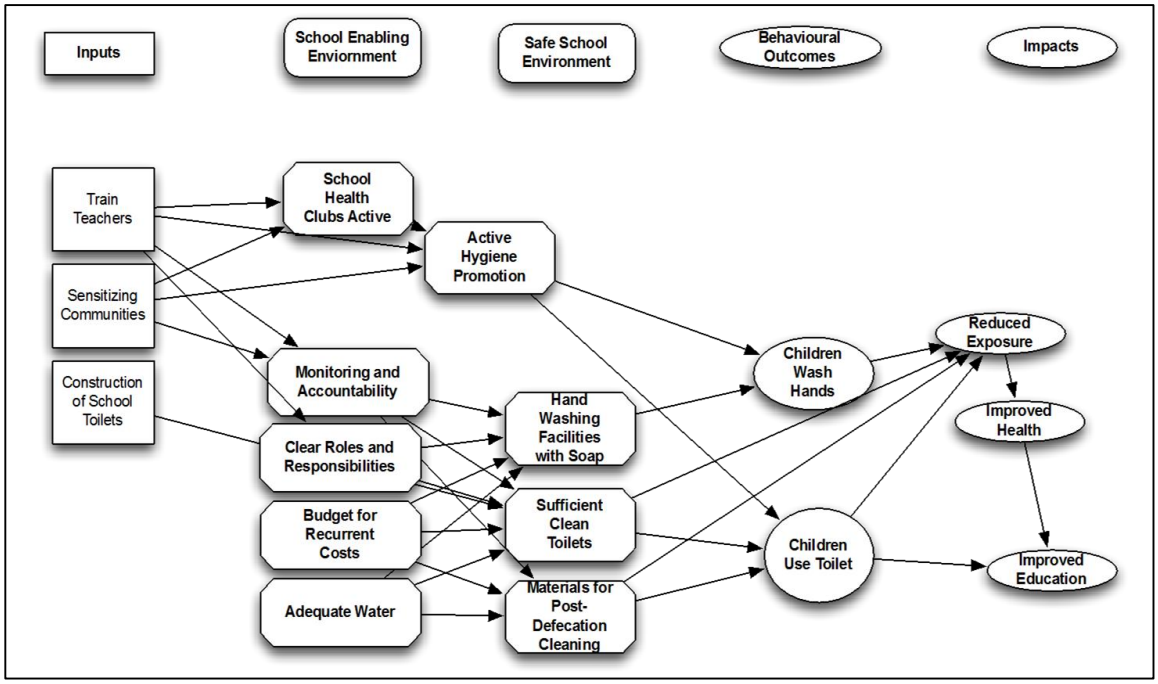


Figure 2-2-4 – Evaluation Framework for School WASH Component

The key research questions for the School WASH components are the following:

- Is school sanitation being implemented according to the programme's technical guidelines?
- Are the required environmental conditions in place for effective school WASH (adequate clean latrines, hand washing facilities with soap, post-defecation materials)
- Are the school enabling conditions in place for effective school WASH (budget, roles and responsibilities, monitoring and accountability, adequate water)?
- Have the NSC policies and guidelines supported the creation of enabling conditions?

3. Methods and Analysis

The process evaluation of the NSC was a collaborative effort between the SHARE consortium and the Government of Tanzania. The study design was conceptualised by SHARE and discussed with the MoHSW, NIMR and NBS. The MoHSW coordinated the supervision of data collection, the National Institute for Medical Research (NIMR) provided support in the interpretation of protocol and execution of field plans, the National Bureau of Statistics (NBS) developed the sampling strategy (See Annex III) and provided maps for data collection.

3.1 Data Sources

The process evaluation collected and analysed both primary and secondary data sources. Primary data included responses from four sets of structured questionnaires, administered face-to-face by trained enumerators with Head of households, school teachers and key informants from Regional Health and Education Departments and District Health and Education Departments. Secondary sources included Quarterly Monitoring reports compiled by the MoHSW based on data collected by Districts and Regions on the NSC output progress and financial expenditures and Aide Memoires of WSDP Joint Supervision Meetings. Table 3-1 provides a summary of the data collection tools adopted in the process evaluation and their use in the analysis.

Table 3-1: Data sources

Data Source	Description	Analysis
Primary Data		
Household Survey-Structured questionnaire	• Questionnaire information • Respondent Characteristics • Household Composition • Household characteristics • Decision Making • Behavioural Determinants: • Motivation • Opportunity • Ability • Social Network Communication • Direct observations of sanitation and hygiene facilities	Change Model Analysis Analysis of Household Sanitation outcomes
Community Survey-Structured questionnaire administered to village leader	• Community identification • Investment Projects in the community • Governance • Service Providers and Social Marketing	Action Model and Change Model Analysis
School WASH survey-Structured questionnaire administered face to face with Head teachers of selected schools	• School Information • School Management • School Funds • School resources and needs • School Health Clubs	Analysis of School WASH outcomes

Key informants interviews with: Regional Health Officers (RHOs), Regional Education Officers (REOs), District Health Officers (DHOs), District Education Officers (DEOs)	For both levels and programme (household and schools), the questionnaires were organised into four areas: • Planning and budget • Coordination • Implementation • Monitoring	Action Model Analysis Analysis of NSC enabling environment
Secondary Sources		
MoHSW Quarterly progress Reports	The following reports were provided: • Q3 January-March 2013 • Q4 April-June 2013 • Q1 July-September 201 • Q2 October-December 2013 • Q3 January-March 2013 • Q4 April-June 2014 • Q1 July-September 2014* • Q2 October-December 2014*	Analysis of NSC enabling environment
Aide Memoire of Joint Supervision Meetings	WSDP Joint Supervision meetings from September 2011 until October 2014	Analysis of NSC enabling environment

*(Reported as one document from July-December 2014)

3.2 Study Design

This subsection provides some key information on the study design and the Sampling methodology adopted. For a detailed description of design, sample and methods, please refer to Annex III.

3.2.1 Household Survey

A cross-section survey was designed to be administered face to face to head of households (later also including spouse). The household sanitation survey was carried out in 46 districts, where the NSC was implemented at time of the evaluation which form the 14 regions of the National Sanitation Campaign Process Evaluation Survey in Tanzania Mainland (the regions include Dodoma, Arusha, Tanga, Pwani, Mtwara, Iringa, Tabora, Rukwa, Kigoma, Kagera, Mara, Manyara Njombe and Katavi regions). The survey was representative of the Districts where the evaluation took place.

3.2.2 School WASH Component

A cross-sectional study was designed, and based on an existing monitoring report, 84 schools where sanitation improvements have been made or were ongoing were identified in the targeted districts where the NSC was implemented at household level. The sampling frame were schools where these sanitation improvements have been completed. Seventy schools that satisfied these inclusion criteria were then purposively selected for the study evaluation.

3.2.3 Enabling Environment

Interviews with key informants from all the Regions and Districts involved in the Campaign were administered. These were officers Health and Education officers from all those Districts

and Regions which implemented the NSC at the time of the process evaluation. Table 3-2 below presents the sample frame for the key informant interviews.

Table 3-2: Key informant interviews sample

Key informants	Target	Achieved
Region Health Officers (RHO)	14	14
Region Education Officers (REO)	14	14
District Health Officers (DHO)	47	43
District Education Officers (REO)	47	40

3.3 Piloting and Data Collection

Four data collection tools, designed by the SHARE consortium, were reviewed jointly by all project partners through workshops which were held in Tanzania throughout 2013. The review process entailed checking the contents of the questions against objectives and then consideration of translation from English to Kiswahili. Each single question was reviewed by a group of bilingual native Swahili speakers along with the SHARE team who was responsible for providing guidance regarding the validity of questions in testing intended hypothesis.

Translation of the English version of the questionnaires was conducted in two stages. First stage translation (and back translation) of the finalised data collection tools (from English to Kiswahili) was done by NIMR staff. The draft Kiswahili translated tools were then shared and discussed in a workshop with the MoHSW to produce final agreed tools. Translated tools were programmed into ODK data collection software using Android Smartphone. Programming of ODK was conducted by NIMR Information Technology experts, with technical personnel from the MoHSW.

3.3.1 Data collection teams and training

The Data collection team was organised into three groups:

- Central coordination team which was composed of members from MoHSW (Mr. Elias Chinamo – Co-Principal Investigator), Hamisi Malebo from NIMR (Senior Research Scientist), Mrs. Sylvia Meku (Senior Statistician – Responsible for sampling) from NBS, Mrs. Irene Mremi (Information Technology Expert) and Filemon Tenu (Statistician) from NIMR.
- Field supervisors: these involved technical personnel (including scientists and technical staff) from MoHSW, NIMR, and NBS with capacity to conduct research evaluation and supervise field teams. This group included members of the research technical team and additional personnel from the MoHSW.
- Enumerators. These played the main role as frontline data collectors, responsible for household survey delivery. Enumerators, selected by NIMR were high school leavers or university graduates previously training or field research experience of working with ODK software from previous research projects.

The training of field enumerators was conducted by the Coordination team during a 5-day workshop organised at Edema Conference Hall in Morogoro in July 2013. The activity was split into two sub-sections; one day orientation of supervisors and four days training of data collectors. It included general orientation of study team about the objectives and main protocols for process evaluation, ethical requirements in conducting the study, understanding of field tools to be used, and planning for fieldwork.

3.3.2 Piloting

The household survey questionnaire was piloted by the MoHSW, NIMR and NBS in rural communities of Morogoro region in July 2013. Rural Morogoro, (Mikese village) presents similar conditions of those were the National Sanitation Campaign was implemented. Piloting was conducted by the actual team that collected data in the field. The questionnaire sections that needed correction were noted in the field and changed during plenary session. Proposed corrections were adopted after discussion and approval by a joint meeting of expert and field enumerators from MoHSW. Piloting of tools also included observations concerning performance of ODK installed Android Smartphones.

3.4 Data Analysis

This Section outlines analysis conducted in the process evaluation, discussing the main challenges encountered and reasons for deviating from the original protocol.

3.4.1 Household Survey

The majority of the evaluation questions listed in Section 3 were addressed through a cross-sectional survey of households in areas targeted by the NSC. As a single cross-sectional survey, it provides only limited information on key variables related to the campaign. However the results will serve as an adequacy evaluation, assessing whether target levels of determinant conditions and critical outcomes. We planned to compare our results to other statistical comparators, including the NSC baseline, DHS surveys and (if available) the 2012 census, however the use of different methodologies and weighting system made this comparison not possible.

The household survey collects information on a range of household and individual variables. These are grouped into the following categories: socio-demographics, NSC activities, behavioural determinants, WASH behaviours, WASH conditions, sanitation improvement outcomes, and social modifying factors. These categories correspond to the evaluation's conceptual framework and key evaluation questions (See Section 3). For all domains, individual variables are reported in the descriptive analysis. See Annex III for a detailed description of data analysis.

3.4.2 School WASH

Data were analysed using STATA 13 (StataCorp LP, College Station, USA). Descriptive statistics including means and proportions were used to assess the availability and adequacy of the environmental/WASH conditions and the enabling environment. Descriptive statistics were also used to describe the institutional relationships and activities within the external enabling environments, and to also provide a basis for overall assessment of functioning and barriers in each of the four areas and how it affected the level of implementation of school WASH and household improved sanitation at the district level. All multiple responses were analysed using Stata's command 'mrtab', especially for responses that were not already treated as separate variables in the questionnaire. The association between categorical exposures and outcomes (for example toilet technology type and toilet cleanliness) was assessed using the Pearson Chi-square test.

3.4.3 Enabling environment

One of the objectives of this evaluation was to interpret the findings in the context of this broader environment. In particular, how do institutional arrangements facilitate or constrain the NSC. For the purpose of this evaluation, this was done as a two-stage process. We documented the process of institutional arrangements and activities that characterises roles and relationships among different institutions. This was done through content analysis of WSDP documents and MoHSW reports. Information was grouped in categories, which were checked for consistency between our research team. Descriptive statistics was conducted on interviews with key informants. One researcher analysed responses from Regional and District health officers involved in the household component of the NSC, and another researcher analysed the Regional and District education officers involved in the school component of the Campaign. The analysis was then reviewed by a third researcher for robustness.

The second step was to understand potential barriers, dependencies, and delays that have occurred within this context. This was also be done through the review of the WSDP programme documents and MoHSW monitoring forms (See Table 3-1 for a list of the documents analysed) and discussions with key informants. The purpose of this portion of the evaluation was to identify potential strategies or steps that have been done or could be done to increase the efficiency of the Campaign.

Study limitations

The execution of the process evaluation encountered several challenges which affected adherence to the original plan of analysis of the process evaluation. These affected the following aspects of the study (please see Annex IV for a detailed description of the study limitations):

- Challenges with Household Questionnaire Design
- Execution of survey using ODK and Android phones
- Challenges with the Community Questionnaire
- Challenges with Key Informants interviews
- Financial challenges encountered by MoHSW
- Logistic issues

4. The NSC Enabling Environment

This Section presents the results from the analysis of the enabling environment of the National Sanitation Campaign (NSC) for the Household Sanitation and School WASH components. This was assessed through a triangulation of sources: the MoHSW Quarterly Monitoring reports, the Aide Memoires of the WSDP Joint Supervision Meetings and structured interviews with key informants at regional and district level (RHOs, DHOs, REOs and DEOs). The reporting period covered by this analysis is from May 2012 until December 2014, which corresponds to the timeline during which the process evaluation was conducted.

4.1 Scaling Up RWSS: Household Sanitation

To facilitate understanding of the enabling environment for the Household Sanitation part of Phase I of the NSC, the analysed data were presented into six sub-categories:

- Implementation: relates to the actual pace of the NSC campaign (HHS) execution by Regions and Districts.
- Finance and budget: refers to issues related to funds disbursement and budget execution.
- Coordination: relates to the role and responsibilities allocated to the central government, regions and districts, as well as among the other main sector actors.
- Monitoring and reporting: refers to compliance by Regions and LGAs to the financial and output monitoring and reporting required by the WSDP.
- Resources and capacity development: concerns issues of procurement, human resources and capacities to implement the NSC.

4.1.1 Implementation

To evaluate the performance of the NSC implementation, we reviewed and analysed the Aide Memoires of Water Sector Development Programme (WSDP) Joint Supervision meetings, which provide systematic ratings of the progress of Component 2 “Rural WSS”, under which the NSC falls. Table 4-1 summarises the ratings of the NSC implementation and their main justification.

Table 4-1: WSDP Rating of RWSS component implementation

Implementation rating for RWSS subcomponent		
Mission Year	**Rating**	**Description**
May 2012	**Moderately Unsatisfactory**	Slow progress in finalizing and implementing village scheme design by MoWI; Poor financial management and reporting; Low compliance to MoUs Procurement delays in the NSC; The NSC underachieved on the target set despite additional funding allocated to the sub-component. Results of the MIS were not yet reported
October 2012	**Moderately Satisfactory**	Improved supervision and procurement linked to construction of village schemes, improved reporting and compliance with MoUs. Accelerating in progress with the NSC. New measures to strengthen management to ensure sustainability.
May 2013	**Moderately Satisfactory**	Mostly due to progress in constructing village water schemes.
October 2013	**Moderately Satisfactory**	Water supply schemes have been completed. Improvement on strengthening coordination between the MoWI and PMO-RALG. Improvement on the NSC targets despite delays Supervision of Sub-component by MoWI, efficient fund flow, sustainability strategy needs to be further improved.
May 2014	**Satisfactory**	All village schemes have been completed under the supervision of the MoWI. The NSC is showing steady progress despite slow take off. The programme's sustainability still remains a challenge.
October 2014	**Satisfactory**	Improvement in achieving targets. Coordination needs to be increased as well as speed of implementation

We compared the ratings of WSDP with the progress tracked by the MoHSW in their Quarterly Monitoring Reports. Table 4-2 provides a record of the activities performed by the MoHSW during each quarter monitored. These activities were grouped into four categories: (i) training; (ii) advocacy and promotion; (iii) monitoring and (iv) procurement.

Table 4-2: Reported activities by MoHSW

		Year/Quarters							
		FY 2012/2013		FY 2013/2014				FY 2014/2015	
Category	**Activities Description**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**
Training	Orientation workshop on the NSC new 70 LGAs. CLTS training to 140 District facilitators.	x							
	Training to 25 Regional Health Officers and 80 officials from LGAs in the FY 2013/14. Preparation of Artisans User Guide.		x						
	Training of CLTS facilitators to 11 LGAs. Facilitation of mason training in Songea MC, Kilosa DC, Babati DC, Rungwe DC and Mvomero DC.			x					
	Development of the NSC implementation guide. Training on CLTS and Sanitation Marketing to officials from LGAs and training institutions					x			
	Training of Community Led Total Sanitation (CLTS) to 45 facilitators from new districts as well as other councils which did not have trained focal persons						x		
	Learning visit to Bangladesh and India to strengthen the implementation of the NSC.								x
Advocacy and promotion	2013 Annual cleanliness competition Handwashing and sanitation uptake promotional events.		x						
	The commemoration of Global Hand Washing Day, World Toilet Day and National Sanitation Week.				x				
	Cleanliness competition and assessment of NSC performance in councils and villages.						x		
	Commemoration of Global Hand Washing Day (GHWD), World Toilet Day and National Sanitation Week in Morogoro Region.								x
Monitoring	Review of Council and Regional plans for 2013/14.	x							
	Preparation for the Process Evaluation is ongoing.						x		
	Finalization of the National Sanitation Information Management System (NSMIS) and database.							x	
	Planning meeting with the DHOs, RHOs and REOs on 2014/15 budget preparation. Supervision of 11 Regions under the support of WSP.					x			

	Participation in the WSDP joint supervision mission on mid-term review of performance. Working session to finalize tools for the process evaluation of the NSC. Supervision mission was conducted in all 25 regions of Tanzania.						x		
	Finalization of the NSC II implementation guidelines.							x	
	WASH stakeholders mapping in three councils to establish the partners' contribution to the NSC implementation.								x
	Participation in the WSDP joint supervision mission to prepare the mid-term performance review.								x
Procurement	The evaluation of the shortlisted bidders for the provision concept development and messages for the National Sanitation Campaign. The winner has been identified awaiting the signing of the contract Procurement for preparation of the National Sanitation Management Information System (MIS) and database. The work was commissioned to Ardhi University under the support of UNICEF and Global Sanitation Fund (GSF).			x					

As illustrated in Figure 4-1, during Phase I of the NSC, the MoHSW was mostly involved in monitoring (39%) and training (36%) activities, followed by the organisation of promotional and advocacy events (18%), whilst only 7% of activities were reported to be procurement.

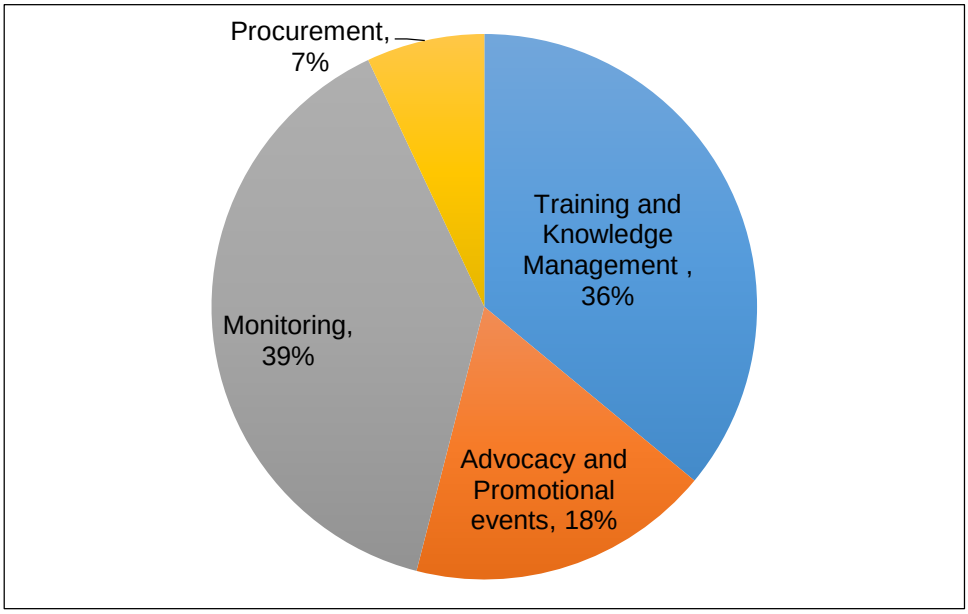
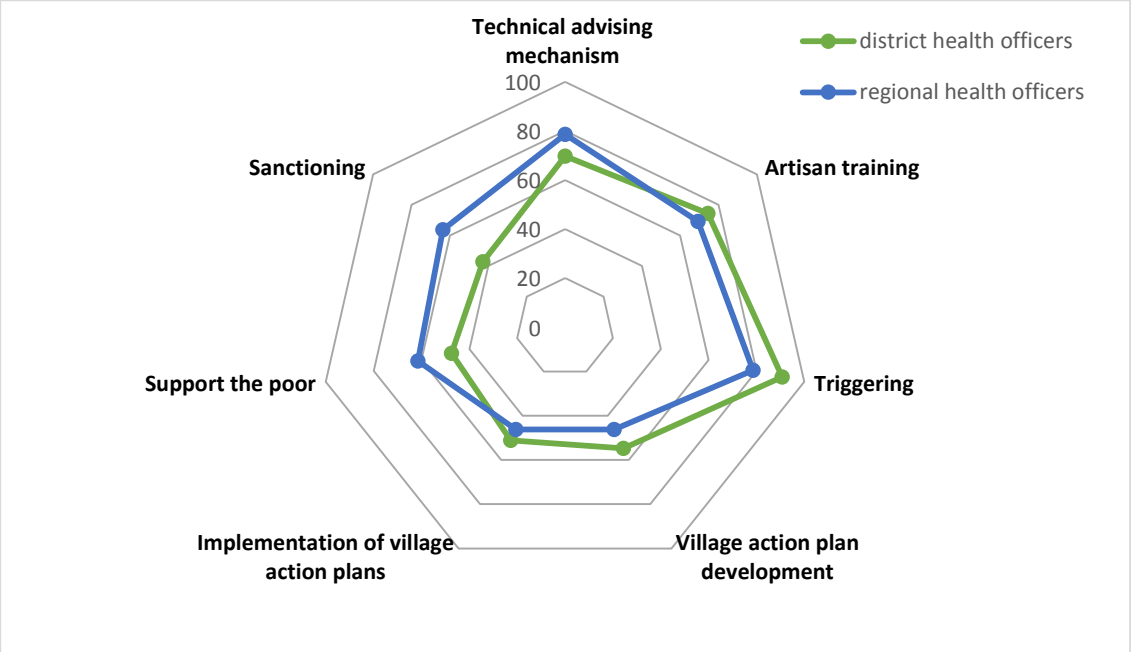


Figure 4-4-1: Activities conducted by the MoHSW during the NSC

Whether, on average, the performance of component RWSS was rated moderately satisfactory by the WSDP, interviews with Regional Health Officers (RHOs) and District Health Officers (DHOs) reported a satisfactory performance (See Table 4-3). Overall the NSC implementation was reported to have performed well, in particular with relation to the technical advising (70% of DHOs and 78% of RHOs), artisan training (74% DHOs and 69% RHOs). Conversely, those NSC activities reported to perform poorly by the majority of DHOs were: the sanctioning mechanism of the campaign (43% of DHOs) and support to the poorest households (47.5%). Less than 50% of RHOs reported that the development and implementation of village action plans were executed poorly.

Table 4-3: DHOs and RHOs perceptions of NSC Implementation performance

How well does _____ function?	%	
Somewhat well + well	**District (DHOs)**	**Region (RHOs)**
Technical advising mechanism	69.8	78.6
Artisan training	74.4	69.2
Triggering	90.7	78.6
Village action plan development	54.8	46.2
Implementation of village action plans	51.2	46.2
Support the poor	47.5	61.5
Sanctioning	42.9	63.6



To those officers who rated the NSC performance poor, we asked to identify the main issues encountered during implementation (Table 4-4 below). Whilst DHOs indicated problems primarily related to lack of financial resources to implement the campaign activities, RHOs also reported challenges with poor technical skills.

Table 4-4: Problems identified with NSC implementation activities

Problems Identified	District (DHOs)	Region (RHOs)
Technical advising mechanism	Insufficient human resources (56.3%)	Insufficient financial resources (60%) Poor technical capacity (60%)
Artisan training	Insufficient financial resources (58.3%)	Insufficient financial resources (67.5%) Poor technical capacity (62.5%)
Triggering	Insufficient financial resources (66.7%)	Insufficient technical capacity (50%) Insufficient human resources (50%)
Village action plan development	Insufficient financial resources (50%)	Insufficient financial resources (50%)
Implementation of village action plans	Insufficient financial resources (55%)	Insufficient financial resources (60%)
Support the poor	Insufficient financial resources (66.7%)	Insufficient financial resources (66.7%)

4.1.2 Planning and Budgeting

As emerged from interviews with DHOs and RHOs in section 5.1.1, the poor financial flow and lack of funds was one the greatest challenges in implementing the NSC. The WSDP Aide Memoires reported that the total budget for household sanitation for the Financial Year 2012/2013 was disbursed in May 2013 and 17% of the budget for the Financial Year 2013/2014 was disbursed in April 2014. These delays significantly slowed the implementation of the Campaign. Table 4-5 reports the issues emerged during the implementation from both the analysis of the WSDP Aide Memoire and the Progress reports prepared by the MoHSW.

Table 4-5: Financial issues identified during the NSC Phase I implementation

Financial issues identified	Description	Source of Information
Erroneous disbursement of funds	The first disbursement from the AfDB for component 2 of the WSDP (of USD 45 million) was not made in the basket holding account but into an existing AfDB special account, against the MoU requirements.	Aide Memoire 8th JSM, May 2012
Poor budget execution by RS and LGAs	Funds disbursed to LGAs for the household sanitation and hygiene promotion and SWASH infrastructure improvements, but many LGAs unaware that funds were in place. Funds carried over from one period to another with earmarked activities not being implemented.	Aide Memoire 8th JSM, May 2012 Aide Memoire 10th JSM, May 2013
Late disbursement of funds	Some LGAs did not access funds until end of March 2013, due to problems with the accounting system.	MoHSW January-March 2013
	Fund allocation is delayed and intermittent, compromising implementation.	MoHSW April-June 2013 April-June 2014 July-September 2014
	Late disbursement of funds hampered output monitoring by LGAs.	MoHSW October-December 2014
Discrepancy between budget expenditures and outputs achieved	Some LGAs who have spent their allocated budget do not show a proportional progress in outputs achievement.	Aide Memoire 12th JSM, June 2014

These results were confirmed by interviews with Health and Education officers from Regions and Districts, where the Campaign was implemented. Respondents were asked to report on the purpose of NSC funding received from the national-level; these results are summarized in Figure 4-2. When asked whether funding had been received for the previous year (2012/2013), only 32 districts (74.4%) and 7 regions (50%) reported that funding was fully received for both household and school NSC activities. One respondent from Njombe region (7.1%) reported to have yet to receive any funding, while the remaining 9 districts and 6 regions confirmed that they had only received partial funding for either household or school activities.

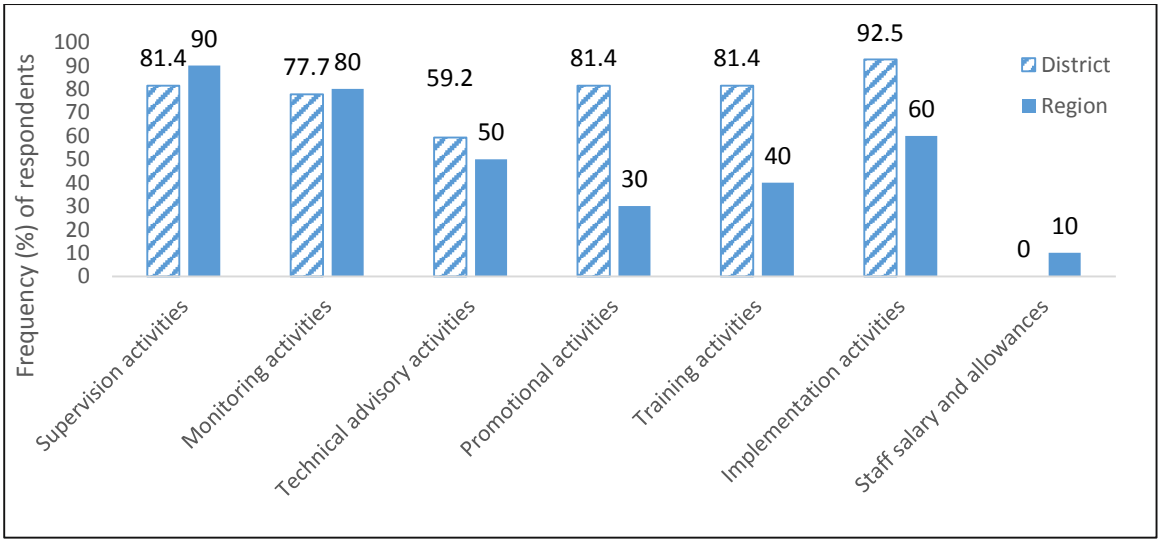


Figure 4-4-2 Reported purpose of NSC funding

When asked why they had not received their annual funding, 76.9% of districts and 71.4% of regions responded that the funds were disbursed too late (Figure 4-3). Among other reasons provided were: issues with the financial electronic system (28.5% of RHOs); bureaucracy at central level (23% of DHOs).

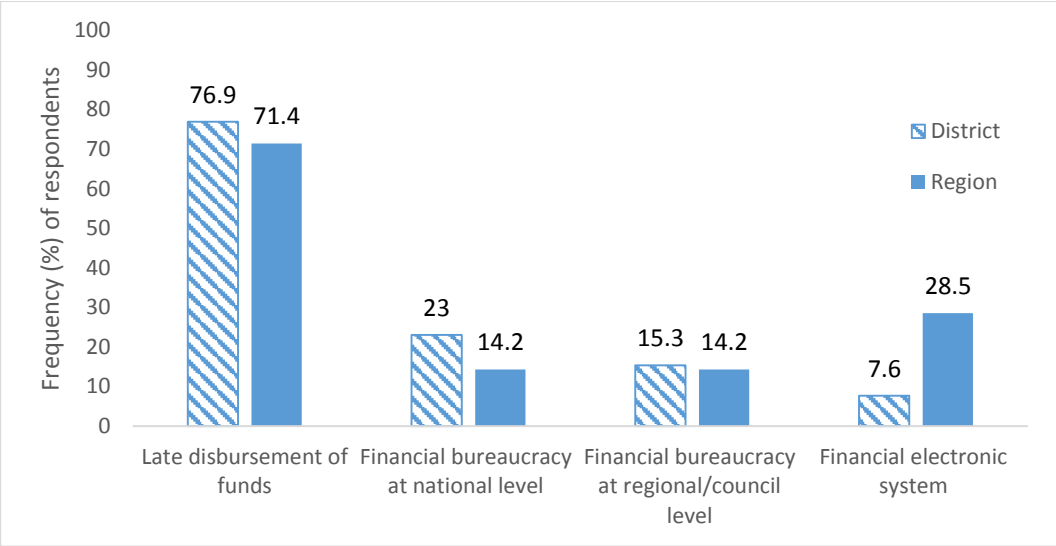


Figure 4-4-3: Reported reasons for funding delays

4.1.3 Coordination

Coordination within the WSDP has been considered a priority for ensuring the implementation of RWSS component. To improve coordination, in 2011 the WSDP introduced three mechanisms to facilitate dialogue and transparency within the sector. These are the following:

a) A Steering Committee, comprised of permanent secretaries of key ministries and development partner representatives to oversee the programme.
b) Four technical working groups to oversee the four thematic components of the programme.
c) A Programme Coordination Unit (PCU) to coordinate all four components of the WSDP.

Despite the efforts made, three coordination issues have emerged at central government level, as well as between central government and Regions and Districts and between regions and districts (See Table 4-6).

Table 4-6: Coordination issues reported during the NSC Phase I

Coordination issues identified	Description	Source of Information
Central Government and IAs	The mission noted that it is necessary to ensure that approaches on sanitation and hygiene undertaken by international donors are compatible with the national policy	Aide Memoire 7th JSM, September October 2011
Central government	The role of PMO-RALG and LGAs needs to be strengthened to improve coordination of the component.	Aide Memoire 8th JSM, May 2012
	Better definition of roles and responsibilities within PMO-RALG needs to be achieved.	Aide Memoire 10th JSM, May 2013
	Coordination between MoWI and PMO-RALG has been poor, but it improved in recent months.	Aide Memoire 11th JSM, October 2013
	Coordination between MoWI, MoHSW, MoEVT and PMO-RALG shows only modest improvement	
	Clear definition of roles and responsibilities between MoHSW and MoEVT. Whilst the MoHSW has been identified as the lead Government agency for the NSC, with the MoEVT having an advisory role, funds for LGAs have been allocated directly to MoEVT.	Aide Memoire 11th JSM, October 2013
RS and LGAs	Multi-sectorial coordination between Regions and LGAs across departments must be strengthened	MoHSW April-June 2013

Interviews with Regions and Districts reported different opinions on the performance of coordination mechanisms in the NSC. Overall, the coordination mechanism was reported to have functioned well. When asked to rate the performance of NSC coordination, over 60% of both region and district officials responded either somewhat well or very well for each (Figure 4-4). According to officials interviewed, health departments from 9 districts (90.7%) and 13 regions (92.9%) claimed to meet with other districts or regions, respectively, to discuss NSC activities. The frequency of these meetings varied for different departments. With regards to health officials meeting with their counterparts from the education department, 41.8% of districts claimed to meet monthly while 46.5% claimed to meet annually. Similarly, 42.8% of RHOs claimed to meet with REOs monthly, while 35.7% claimed to meet annually. Responses were somewhat more consistent when asked about the frequency of meeting with the Education and Water departments. 60.6% of DHOs claimed to meet quarterly with DEOs and District Water Officers (DWOs), while 75% of RHOs claimed to meet quarterly with REOs and Regional Water Officers (RWOs).

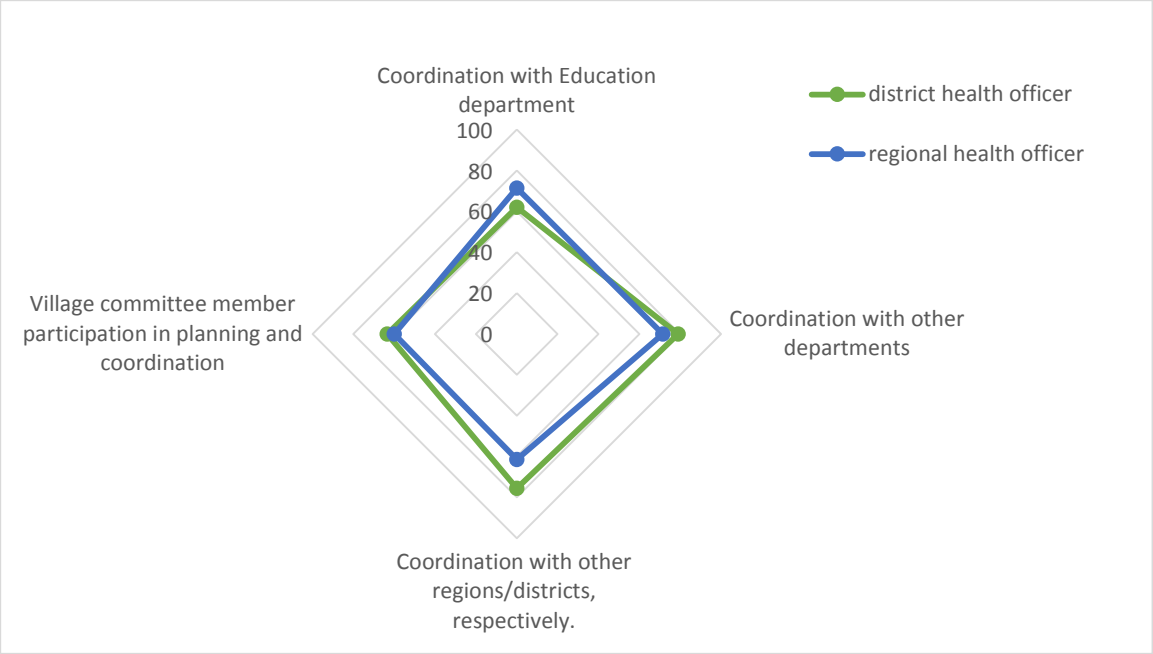


Figure 4-4-4: Frequency of respondents claiming the NSC activities function either somewhat well or very well

When asked to identify the major problems with these activities, insufficient financial resources emerged as the most common finding for each. With regards to coordinating with the Education Department, coordinating with other districts/regions, and involving village committee members in NSC planning and coordination activities, insufficient financial resources was claimed to be a major problem for 77.8%, 100%, and 66.7% of regional health officials, respectively, and 66.7%, 80%, and 72.7% of district health officials, respectively. Furthermore, an insufficient number of human resources was identified as a major problem for coordination with the Education department and coordination with other districts by 57.1% and 50% of DHOs, respectively.

4.1.4 Resources and Capacity Development

Three main challenges emerged from the analysis of the MoHSW quarterly reports and the WSDP Aide Memoires of the Joint Supervision Meetings: a) scarce material resources to facilitate the NSC implementation; b) poor and/or scarce human resources; c) delays in procurement. These are summarized in Table 4-7.

Table 4-7: Challenges identified

Issues reported	Description	Source of Information
Scarce Resources	Inadequate means of transports at LGAs level to conduct monitoring of NSC implementation progress.	MoHSW January-March 2013 April-June 2013 April-June 2014 October-December 2014
Shortage of Staffing	Shortage of NSC staff (particularly Village Health Officers) at ward and village level.	MoHSW April-June 2013 April-June 2014
	Dropout of data collection staff at village level.	MoHSW April-June 2014
	Drop out of Village Health Officers who collect household sanitation registers due to lack of incentives	MoHSW October- December 2014
	Understaffing at RS and LGAs level is low for component RSWW. Although for health and sanitation is high with a range of 52-90% for LGAs and 90% for RS	Aide Memoire 8th JSM, May 2012
Poor skills	Shortage of skilled staff at RS and LGAs level This is due to lack of graduate staff in the country	Aide Memoire 7th JSM, September 2011
	Poor expertise at RS and LGAS	Aide Memoire 10th JSM, May 2013 Aide Memoire 12th JSM, June 2014
	Capacities of RS on sanitation marketing needs to be strengthened	Aide Memoire 11th JSM, October 2013
	Poor Capacity in monitoring and reporting and programme management	
Procurement delays	Delays in procurement of communication campaign. Procurement by MoHSW of a vendor to develop sanitation and hygiene messages needs to be finalized	Aide Memoire 10th JSM, May 2013 Aide Memoire June 2014 12th JSM

4.1.5 Monitoring and Reporting

Monitoring and reporting of financial expenditures and outputs had been consistently indicated as one of the main issues of the National Sanitation Campaign. Analysis of WSDP documents and Quarterly matrices from MoHSW shows that timely submission and quality of reporting from Regions involved in the Campaign have been poor throughout Phase I. Table 4-8 summarizes the main monitoring and reporting issues identified.

Table 4-8: Monitoring and reporting issues identified

Issues reported	Description	Source Information
Poor quality of reporting from RHOs and LGAs	Other than latrine construction, the other NSC indicators were not reported. LGAs experience challenges meeting the WSDP accounting and auditing requirements, despite the efforts made to update the MIS with key accounting information including receipts, expenditures and contracts.	Aide Memoire 8th JSM, May 2012 Aide Memoire 10th JSM, May 2013 Aide Memoire 11th JSM, October 2013 MoHSW, January-March 2013 April-June 2013, July-September 2013
Late Submission of Reports by RHOs	Delays in timely submission of financial and outputs reports cause late compilation of the country progress report.	MoHSW July-September 2013 October-December 2013 January-March 2014 Apr-June 2014

To further confirm the challenges faced with monitoring the NSC outputs, Figure 4-5 summarizes the frequency of financial reports compiled by RHOs and submitted on time or with late submission to the MoHSW. For each of the quarters investigated at least 50% of Regions submitted the expenditures and outputs monitoring reports late. Ad indicated in the MoHSW quarterly reports, in several occasions the quality of those financial reports was poor.

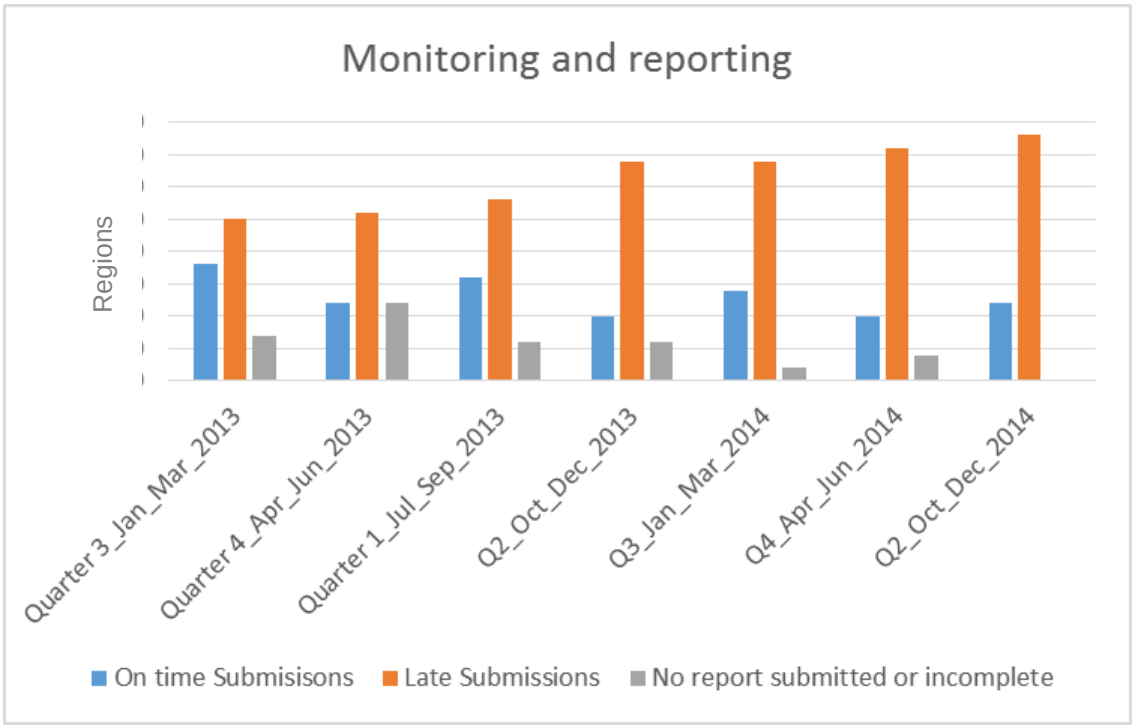


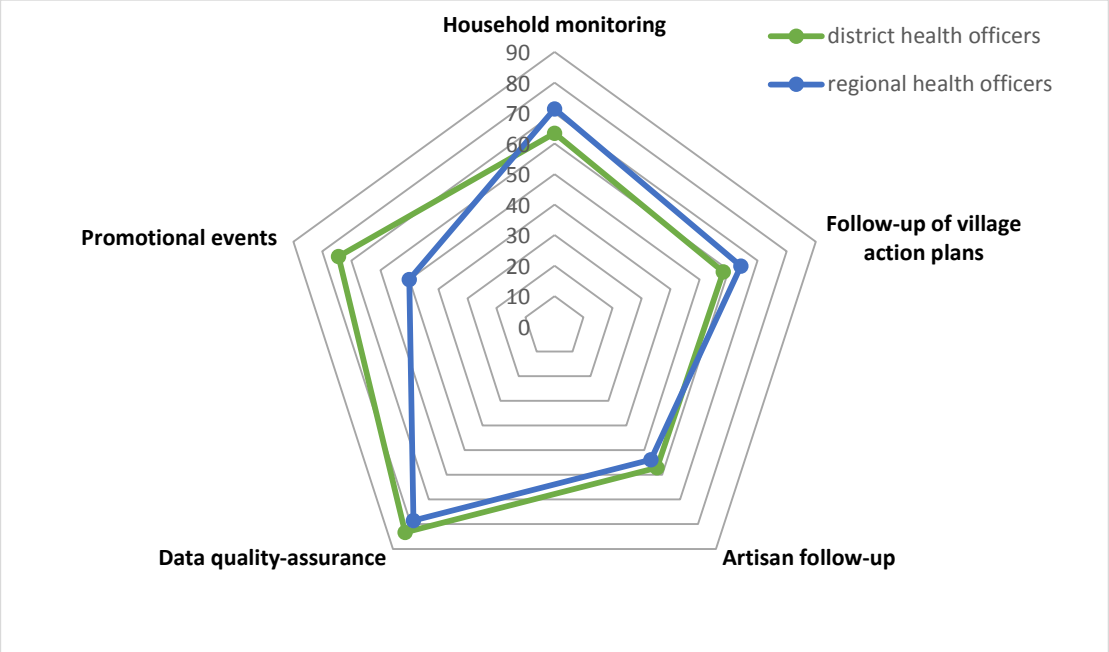
Figure 4-4-5: Submission rates of M&E Quarterly reports by RHOs

Whilst monitoring and reporting emerge as a challenge for the effective implementation of Phase I of the NSC, interviews with RHOs and DHOs reveal a general satisfaction with the monitoring system. Table 4-9 below presents the result of the survey of RHOs and DHOs

perceptions on the performance of monitoring. Overall, monitoring is perceived to have function well for most of the Campaign's activities, by both RHOs and DHOs.

Table 4-9: Perceptions of Monitoring performance

How well does monitoring of the following activities function?		
Somewhat well + very well (%)	**DHOs**	**RHOs**
Household monitoring	63.4	71.4
Follow-up of village action plans	58.1	64.3
Artisan follow-up	57.1	53.8
Data quality-assurance	83.3	78.6
Promotional events	74.4	50



Among those respondents who reported that monitoring functioned poorly, the inadequacy of financial and human resources allocated for monitoring was indicated as one of the main issues. See Table 4-10.

Table 4-10: Problems identified with monitoring

Main problems identified with monitoring		
Monitoring Domain	**DHOs**	**RHOs**
Household monitoring	Insufficient financial resources (66.7%)	Others (50%)
Follow-up of village action plans	Insufficient financial resources (55.6%) Insufficient human resources (44.4%)	Insufficient financial resources (50%) + others (50%)
Artisan follow-up	Insufficient financial resources (47.1%) Insufficient human resources (41.2%)	Insufficient financial resources (60%)
Data quality-assurance	Insufficient financial resources (55.6%)	Insufficient technical capacity (50%) Insufficient human resources (50%)
Promotional events	Insufficient financial resources (63.6%)	Insufficient financial resources (85.7%)

The level of use of monitoring information gathered is differently allocated between Districts and Regions. Table 4-11, below, shows how monitoring data are employed by District and Regional officials, respectively. Whilst DHOs use monitoring data to organise retriggering meetings (54.7%) and to plan sanitation marketing events (57.1%), the majority of RHOs indicated to use monitoring data for reporting to the MoHSW (71.4%).

Table 4-11: Reported use of monitoring data by RHOs and DHOs

Reported use of monitoring data			
DHOs		**RHOs**	
Activity	**%**	**Activity**	**%**
Organize retriggering	54.7	Report to ministry	71.4
Planning marketing events	57.1	Budget reallocation	28.6
Planning mason's training	33.3	Sanction development	28.6
Future planning	14.6	For the provision of further support	50
Evaluation	14.6		
Sanctioning	4.2		

4.2 Scaling Up RWSS: School WASH

The implementation of the School WASH component of the NSC for which 7 million USD was allocated, began later than planned and implementation presented similar challenges to those experienced for the household sanitation component.

The SWASH component was coordinated by the MoHSW, with the MoVET playing an advisory role. Table 4-12, below, provides a record of the activities performed by the MoEVT during the evaluation period.

Table 4-12: Reported activities by MoEVT

		Year/Quarters							
		FY 2012/2013		FY 2013/2014				FY 2014/ 2015	
Category	**MoEVT Activities Description**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**
Training and Knowledge Management	Dissemination of SWASH guidelines and verification to 42 LGAs and 10 RS. Experience sharing meeting with WASH stakeholders from Ministries, 10 RS and 42 CWSTs.		x						
	Finalization of School WASH facilitation guideline and toolkit.			x					
	Training of 180 Ward Education Coordinators from all LGAs (17) of Ruvuma, Njombe and Iringa Regions.				x				

	Training of national Facilitators on National School WASH guidelines and their Toolkits.				x				
	Orientation and training of National SWASH Facilitators (REOs, DEOs and DHOs).					x			
	SWASH Mapping Analysis was conducted and reports were prepared for 6 regions.						x		
	Facilitate capacity building of Regional and Council sanitation team for school WASH management in 24 LGA from 4 regions. Research on Menstrual Hygiene management.							x	
	Development of school WASH financial guidelines. Finalization of school WASH toolkit No. 1.3 & 5.								x
Advocacy and promotional events	Participation to the climax of World Environment Day		x						
Monitoring	Supervision and Monitoring of School WASH in 42 LGAs		x						
	Supervision of 12 regions to oversee the progress on school WASH.			x					
	A WASH in Schools (WinS) on Sanitation Campaign sharing meeting was held to review LGAs and RS status and to identify the barriers to effective SWASH				x				
	Monitoring of SWASH activities in four Regions: Mtwara, Singida, Kilimanjaro and Dodoma. School WASH Assessment in 8 Regions (Kilimanjaro, Tanga, Ruvuma, Njombe, Iringa, Rukwa, Mtwara and Dodoma).					x			
	Follow up and monitoring of School WASH activities							x	
	Follow up and Monitoring of school WASH in Mara, Mbeya, Tabora, Geita, Simiyu, Arusha, Pwani, Iringa, Kagera, Morogoro Kigoma and Dar es Salaam Regions.								x

As illustrated in Figure 4-6, the MoEVT was mostly involved in training and knowledge management activities (58%), such as the development of the SWASH guidelines and the

training of LGAs and schools to implement them, followed by Monitoring and Supervision activities (37%) and advocacy and promotional events (5%).

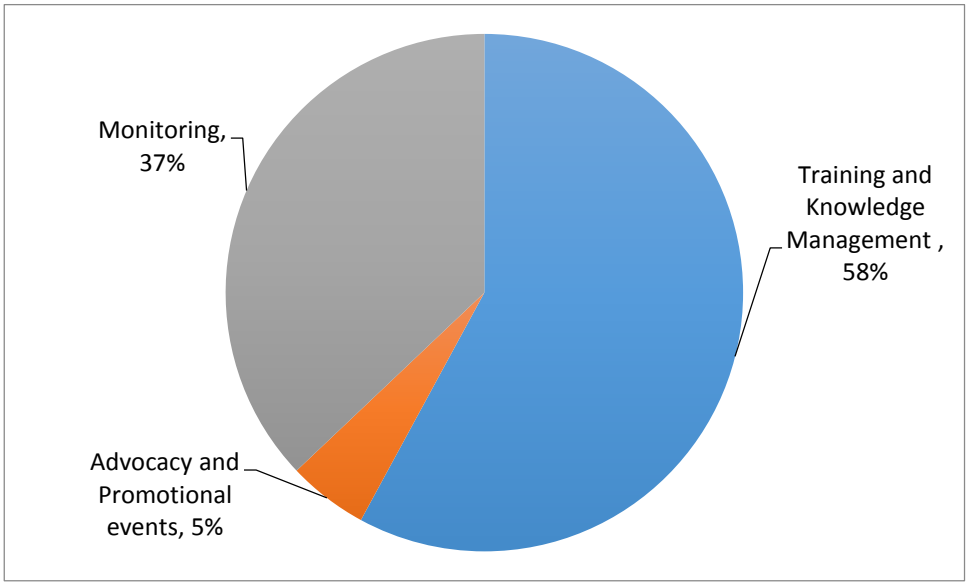


Figure 4-4-6: MoEVT activities during NSC

As for the Household Sanitation component, we analysed WSDP Aide Memoire documents of Joint Supervision Missions, the Quarterly reports compiled by the MoEVT for School WASH (SWASH) activities and we have conducted semi-structured interviews with REOs and DEOs (or SWASH coordinators).
In the analysis of the enabling environment for the implementation of the SWASH component we have disaggregated the results into three categories:

a) Planning: relates to the role and responsibilities and the main activities of the campaign.
b) Budget allocation and financing: refers to funds disbursement, budget planning and execution.
c) Coordination: relates to the role and responsibilities allocated within the NSC both at central government, at regional and district level as well as among the main actors in the sector.
d) Monitoring and reporting: refers to compliance by Regions and LGAs to the financial and output monitoring and reporting required by the WSDP.

4.2.1 Planning

Interviews with District officials revealed that that the main responsibility for planning SWASH activities lay with Districts (71% of respondents) and the School Management Committees (SMCs) (49% of respondents) (See Table 4-13). The results from the Regional Education Officers (REOs) were in line with those reported by the DEOs, except that the regional secretariat was found to be more active in the planning of school WASH at the regional level.

In terms of budget allocation, the rehabilitation of school toilets (83% of DEOs), for NSC supervision and monitoring (68% of DEOs responses) and training (56% of DEOs) were the activities most prioritized. According to only to 31% of DEOs, the NSC budget was used for recurrent expenditures, such as soap or water treatment. The majority of DEOs (>90%) confirmed that the school budget was inadequate for any recurrent or maintenance expenditures. REOs reported similar results on fund allocation, although a higher proportion of REOs reported that funds were allocated for recurrent (64% of respondents) and maintenance costs (71% of respondents), showing lack of a common understanding on expenditure allocations.

Table 4-13: Planning and Budgeting of School WASH activities

Planning and Budgeting	DEO	REO
	n (%)	n (%)
Stakeholders involved in planning SWASH activities		
MoEVT	1 (2.5)	3 (21.4)
Regional Education Officers	4 (9.8)	7 (50.0)
District Education officers	29 (70.7)	13 (92.9)
Village committees	14 (34.1)	3 (21.4)
School teachers	18 (43.9)	2 (14.3)
School management committee	20 (48.8)	3 (21.4)
Funds Allocation		
NSC monitoring activities	28 (68.3)	13 (92.9)
NSC technical advisory activities	17 (41.5)	9 (64.3)
NSC promotional activities	13 (31.7)	6 (42.9)
NSC training activities	23 (56.1)	7 (50.0)
NSC implementation activities	20 (48.8)	6 (42.9)
NSC staff's salary and allowances	4 (9.8)	2 (14.3)
Rehabilitation of school toilets	34 (82.9)	9 (64.3)
Other	3 (7.3)	2 (14.3)
Whether school budget included soap and water treatment		
Yes	12 (30.8)	9 (64.3)
No	12 (30.8)	4 (28.6)
Sometimes	15 (38.4)	1 (7.1)
Whether school budget included maintenance cost		
Yes	13 (33.3)	10 (71.4)
No	15 (38.5)	4 (28.6)
Sometimes	11 (28.2)	0 (0.0)
Funding for soap and water treatment are sufficient	1 (2.6)	1 (7.1)
Funding for School maintenance are sufficient	2 (5.1)	0 (0.0)

4.2.2 Finance and Budgeting for SWASH

The issue of late disbursement of funds constituted a challenge also to the implementation of the SWASH component. The following financial issues were encountered in the implementation of the SWASH component (Table 4-14):

Table 4-14: Financial issues identified

Financial issues identified	Description	Source of Information
Erroneous Disbursement of funds	The SWASH activities are not progressing and it appears that funds have been allocated to MoEVT for transferring to LGAs, in violation of the AfDB agreement.	Aide Memoire 10th JSM, May 2013
	Persisted problem of funds allocated to MoEVT for transfer to LGAs, in violation of the agreed fund flow management.	Aide Memoire 11th JSM, October 2013
Inadequate funds	Inadequate funds for monitoring SWASH activities to all LGAs.	MoHSW January-March 2014 April-June 2014
	Demand is High but Financial resources are limited.	MoHSW October- December 2013 January-March 2014 April-June 2014 October- December 2014
Poor budget execution by RS and LGAs	Funds disbursed to LGAs for SWASH infrastructure improvements, but many LGAs unaware that funds are in place.	Aide Memoire, 8th JSM, May 2012
Late disbursement of funds	Delays in the disbursement of funds to implementing entities namely; Ministry, Regional Secretariat and LGAs	MoHSW January-March 2014

4.2.3 Coordination

The following coordination issues emerged from the analysis of the Monitoring reports:

- Poor coordination between Regions and LGAs in collating monitoring reports and outputs (MoHSW, April-June 2013)
- Poor coordination between LGAs and local artisans in the rehabilitation of school toilet infrastructure and all funds for rehabilitation should sent to school account. (MoHSW, April-June 2013)
- Lack of coordination among the supervision members from the Regional Secretariat, and District level involved in the campaign (Regional Water and Sanitation Team, and Council Water Sanitation Team) (MoHSW, April-June 2014 and MoHSW, October-December 2014).

As for interviews with Health officials, the key informants' perceptions of the NSC coordination were more positive than those reported by the MoEVT. Collaboration between regions and districts was found to perform very well (21% to 59%) or somewhat well (25% to 56%, Figure 4-7). The coordination among stakeholders on monitoring progress was ranked the highest in terms of how well (very well or somewhat well) it was performed (91%), while school WASH promotion was ranked the lowest (67%).

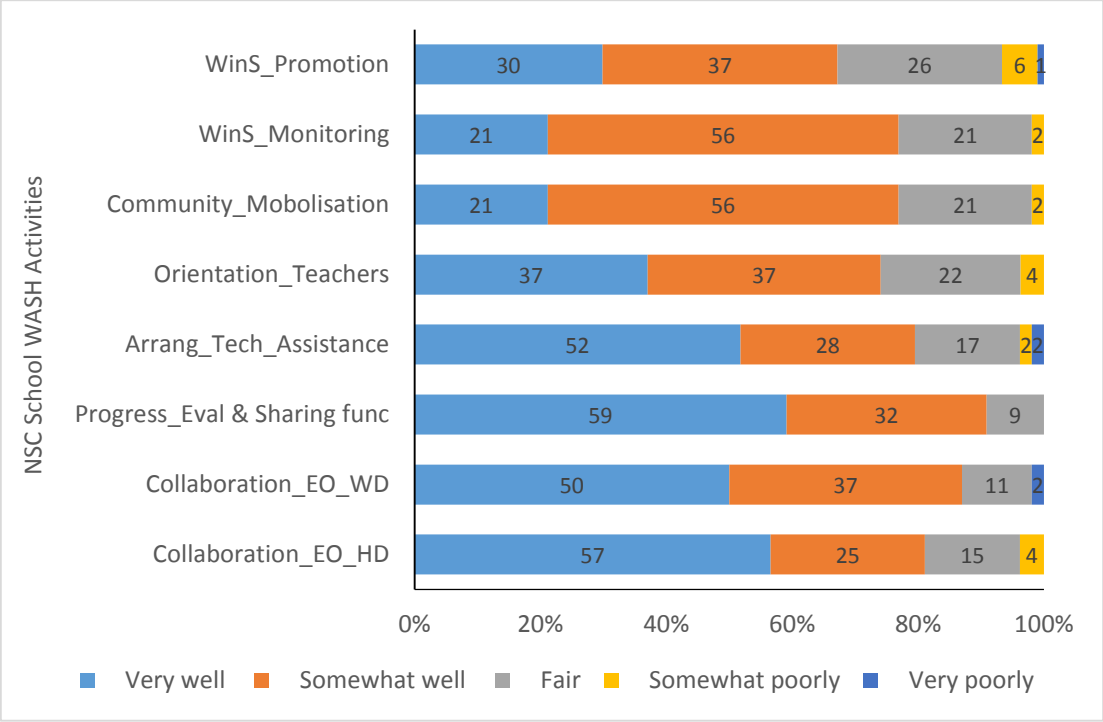
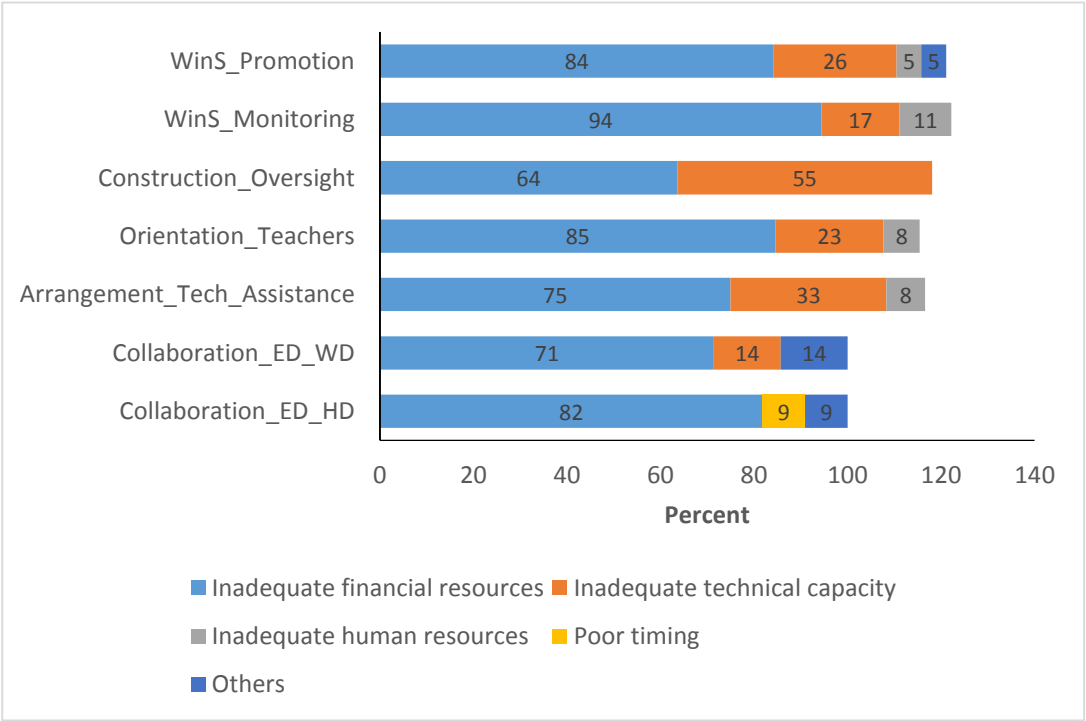


Figure 4-4-7: Performance rating of NSC activities by District and Regional Education Officers

Where respondents reported that coordination for the NSC SWASH activities performed poorly, the inadequate funding was identified as the major barrier to the successful implementation of these activities (Figure 4-8). This was followed by inadequate technical capacity, in particular for activities such as construction oversight (55%), provision of technical assistance (33%) and promotion of school WASH (26%). The lack of human resources was



reported as a challenge to monitoring school WASH progress.

Figure 4-4-8: Main reported reasons for poor coordination

4.2.4 Monitoring and Reporting

Challenges with monitoring and reporting on the progress of SWASH activities were similar to those identified for the Household Sanitation component. These are the following:

- Poor quality of Monitoring reports, due to lack of coordination between REOs and DEOs (MoHSW, April-June, 2013, MoEVT, January-March 2014).
- Late submission of monitoring reports (MoHSW, July-September 2013; January-March 2014).
- Difficulty monitoring and evaluating the NSC attribution and the contribution of other SWASH actors in the LGAs (MoEVT, January-March 2014).
- Lack of resources that facilitate monitoring and Supervision at LGA level (i.e. means of transport). (MoHSW, July-September 2014)

5. Results: Household Component

This Section provides the results of the data collection for the household survey as well as the key informant interviews with region and district health officials.

5.1 Sample targets and coverage

The household survey took place in 14 out of 25 regions of the Tanzanian mainland. Within these 14 regions, 48 districts were included in the original sample, although only 46 of these were surveyed as the 2 excluded districts were not yet enrolled in the NSC. According to the sample strategy, 12 enumeration areas were selected per district, while 8 households were selected per enumeration area. Thus, among the 46 eligible districts, a total of 552 enumeration areas and 4,416 households (96 households per district) were selected for inclusion in the household survey. Of these, 534 enumeration areas (96.7% of selected EAs and 4071 households (92.2% of selected HHs) were covered by the survey (5.1). Enumeration area coverage ranged from a minimum of 9 EAs in Kiteto district to a maximum of 12 EAs achieved in 34 districts. Household survey coverage was highly variable (see section 8 for a description of limitations), and ranged from a minimum of 50 households (Kondoa district) to a maximum of 110 households covered (Bagamoyo district).

Table 5-1 Coverage of household survey sample targets by district

Region	District	Enumeration Areas	Households (target per district: 96)
Dodoma	Kondoa	10	50
	Mpwapwa	12	96
	Kongwa	12	75
	Dodoma MC	12	98
	Chemba	12	96
Arusha	Meru	12	94
	Karatu	12	95
	Ngorongoro	12	96
	Longido	11	87
Tanga	Korogwe DC	11	69
	Handeni	10	59
	Mkinga	11	70
	Korogwe TC	10	70
Pwani	Bagamoyo	12	110
	Kibaha	11	79
	Mkuranga	12	100
	Rufiji	11	91
Mtwara	Mtwara DC	12	90
	Newala	12	95
	Masasi	12	97
	Tandahimba	12	97
Iringa	Iringa	12	92
	Mufindi	12	95
	Mafinga TC	12	95
Tabora	Igunga	12	95
Rukwa	Sumbawanga	12	94
	Nkasi	12	94
Kigoma	Kibondo	12	87
	Kasulu	12	87
	Kigoma MC	12	89
	Uvinza	11	70

Kagera	Karagwe	10	75
	Kyerwa	12	90
Mara	Tarime	12	93
	Musoma DC	12	95
	Bunda	12	96
	Rorya	12	93
	Butiama DC	12	94
Manyara	Hanang	12	94
	Mbulu	12	96
	Simanjiro	12	94
	Kiteto	9	66
	Babati	0	0
Njombe	Wang'ing'ombe	0	0
	Makete	12	96
	Njombe	12	96
Katavi	Mpanda TC	11	87
	Mpanda DC	12	94
Total		**534**	**4071**

5.2 Key Performance Indicators

The NSC uses eight key performance indicators for the monitoring and evaluation of its success – these are outlined in Table 5-2 below. Only data for key performance indicators 1 through 6 were collected for this process evaluation; indicators 7 and 8 are concerned with the NSC's impact on health, and thus were not the focus for this report. Furthermore, a number of limitations in the design of the community survey made the calculation of reliable estimates for indicators 3 or 4 impossible – see Section 4 for a discussion on study limitations. Thus, only indicators 1, 2, 5 and 6 were estimated for this report (see Tables 5-2 and 5-3).

Table 5-2: Key Performance Indicators of the NSC and information sources

	Key Performance Indicator	Monitored for process evaluation?	Process evaluation information source
1	Number of households with improved latrines.	Yes	Household survey
2	Number of households with functional hand washing facilities.	Yes	Household survey
3	Number of villages in the service area of a local sanitation service provider.	Yes	Community survey/ Monitoring Reports
4	Number of sub-villages/villages with signed declarations and deadline to improve household sanitation and hygiene.	Yes	Community survey/ Monitoring Reports
5	Number of schools meeting a ratio of 40 girls, 50 boys per drop hole.	Yes	School WASH survey
6	Number of schools with functional hand washing facilities for boys and girls.	Yes	School WASH survey
7	Number of cholera outbreaks per quarter.	No	N/A
8	Number of diarrhoea cases in the campaign areas per quarter.	No	N/A

Table 5-3: Key performance indicators

KEY PERFORMANCE INDICATORS	n	% (95% CI)
#1: Observed Sanitation Facility Type		
Improved	1,093	24.8 (21.5, 28.4)
Unimproved	2,978	75.2 (71.6, 78.5)
#2: Functional HWF a, b		
Present	335	8.6c
Not present	3,099	91.4c
#5: Schools meeting a ratio of 40 girls, 50 boys per drop hole		
	35	50%
#6: Schools with functional HWFs for boys and girls		
Schools with HWFs	37	53%
Functional Handwashing stations exclusively for boys	30	91%
Functional Handwashing stations exclusively for girls	29	88%
Functional Handwashing stations (communal)	15	42%

a) Either a sink with tap, a plastic container with tap, a mobile bucket, or tippy tap.
b) Observation not possible in 637 households; reasons unclear.
c) Cannot estimate SE because of missing values – strata with single sampling unit.

Key Performance Indicator #1: Number of Households with improved latrines

Using the definitions of improved and unimproved sanitation facilities set out by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (See Section 4, Box 2), 24.8% (95% CI: 21.5-28.4) of sampled households were observed to have an improved sanitation facility. These estimates ranged from a minimum of 4.2% (95% CI: 1.3-12.9) in Newala district to a maximum of 89.6% (95% CI: 78.0-95.4) in Njombe district; Table 5-4 outlines the frequency of improved and unimproved sanitation facilities by district.

Table 5-4: Frequency of households with improved latrines, by district.

Region	District	Improved Sanitation Facility		Unimproved Sanitation Facility	
		N	Weighted % (95% CI)	n	Weighted % (95% CI)
Dodoma	Kondoa	5	12.3 (4.3, 30.3)	45	87.7 (69.7, 95.7)
	Mpwapwa	4	4.2 (1.5,10.9)	92	95.8 (89.1, 98.5)
	Kongwa	9	10.8 (4.0, 25.7)	66	89.2 (74.3, 96)
	Dodoma MC	34	34.54 (19.9, 52.8)	64	65.5 (47.22 ,80.1)
	Chemba	7	7.29 (2.9,17.3)	89	92.7 (82.7 ,97.1)
Arusha	Meru	65	68.7 (51.3, 82.1)	29	31.3 (17.9,48.8)
	Karatu	8	8.33 (3.3,19.4)	87	91.7 (80.6, 96.7)
	Ngorongoro	5	5.21 (1.5 ,16.4)	91	94.8 (83. ,98.5)
	Longido	76	87.5 (751 ,94.2)	11	12.5 (5.8, 24.9)
Tanga	Korogwe DC	34	46.4 (26.7, 67.4)	35	53.57 (32.7, 73.3)
	Handeni	22	38.4 (18.6, 62.9)	37	61.61 (37.1, 81.4)
	Mkinga	22	29.32 (16.3, 46.9)	48	70.68 (53.1, 83.7)
	Korogwe TC	27	40.6 (22.55 ,61.6)	43	59.4 (38.4, 77.5)
Pwani	Bagamoyo	41	42.02 (24.1, 62.4)	69	57.98 (37.7,75.9)
	Kibaha	8	7.7 (3.5,16.2)	71	92.28 (83.8, 96.5)
	Mkuranga	15	15.9 (8.5, 27.8)	85	84.1 (72.2, 91.5)

	Rufiji	13	14.2 (7.1, 26.3)	78	85.8 (73.7, 92.9)
Mtwara	Mtwara DC	12	13.6 (7.25, 24.1)	78	86.38 (75.9, 92.8)
	Newala	4	4.16 (1.3 ,12)	91	95.84(87.03, 98.8)
	Masasi	12	12.5 (5.6, 25.7)	85	87.5 (74.3, 94.4)
	Tandahimba	5	5.21 (1.5, 16.9)	92	94.8 (83.1, 98.5)
Iringa	Iringa	24	26.9 (12.7, 48.1)	68	73.1 (51.9, 87.3)
	Mufindi	38	40 (26, 55.8)	57	60 (44.2, 74.0)
	Mafinga MC	77	80.9 5 (72.3, 87.4)	18	19.1 (12.6, 27.7)
Tabora	Igunga	14	14.6 (5.3 ,34.4)	81	85.4 (65.6,94.7)
Rukwa	Sumbawanga	25	26.6 (16.97 ,39.1)	69	73.4 (60.9,83)
	Nkasi	23	24.3 (12.8, 41)	71	75.8(58.96 ,87.17)
Kigoma	Kibondo	19	20.5 (11.2, 34.7)	68	79.5 (65.34 ,88.85)
	Kasulu	17	19.9 (10.99 ,33.3)	70	80.13 (66.75 ,89.01)
	Kigoma MC	31	35.2 (21.5, 51.8)	58	64.82 (48.23 ,78.5)
	Uvinza	21	28.6 (16.98 ,44.1)	49	71.4 (55.9 ,83)
Kagera	Karagwe	13	17.5 (4.48 ,49.1)	62	82.5 (50.9 ,95.5)
	Kyerwa	9	12.6 (3.9,33.8)	81	87.4(66.2,96.1)
Mara	Tarime	7	7.5 (3.71 ,14.7)	86	92.5 (85.3 ,96.3)
	Musoma DC	29	30.5 (18.9, 45.3)	66	69.5 (54.8,81.1)
	Bunda	9	9.4 (4.08 ,20.1)	87	90.6 (79.9 ,95.9)
	Rorya	21	22.6 (14.6 ,33.3)	72	77.4 (66.7 ,85.4)
	Butiama DC	38	40.4 (26.9, 55.6)	56	59.6 (44.4,73.1)
Manyara	Hanang	12	13.19 (5.1, 29.9)	82	86.8 (70.1 ,94.9)
	Mbulu	24	25 (13.2, 42.2)	72	75 (57.8, 86.8)
	Simanjiro	65	68.7 (46.7, 84.6)	29	31.3 (15.4 ,53.3)
	Kiteto	4	5.5(1.7,16.2)	62	94.5 (83.8, 98.3)
Njombe	Makete	32	33.2 (24.4, 43.4)	64	66.8 (56.6, 75.6)
	Njombe	86	89.6 (78, 95.4)	10	10.4 (4.6, 21.97)
Katavi	Mpanda TC	22	25.3 (12.9, 43.7)	65	74.7 (56.4, 87.1)
	Mpanda DC	5	5.3 (1.3,19.2)	89	94.7 (80.8, 98.7)
Total		**1093**	**24.8 (21.5 ,28.4)**	**2978**	**75.2 (71.6,78.5)**

Key Performance Indicator #2: Number of households with functional handwashing facilities (HWFs).

Functional HWFs– either a sink with tap, a plastic container with a tap, a mobile or basic bucket, or a Tippy Tap – were present in 8.64% of households observed (Table 5-5). As observations were not possible in 637 households, it was not possible to estimate confidence intervals in some cases where a district had observations from a single enumeration area. The minimum observed frequency of functional HWFs was 0% and occurred in 10 districts. Conversely, the highest observed frequency of functional HWFs was 76.6% (95% CI: 61.8-86.9) and occurred in Njombe district.

Table 5-5: Frequency of households with functional HWFs

Region Name	District Name	Present		Not Present	
		n	% (95% CI)b	n	% (95% CI)b
Total		**335**	**8.6**	**3099**	**91.3**
Dodoma	Kondoa	20	43.3 (25, 63.7)	27	56.7 (36.3, 75.0)
	Mpwapwa	0	0	86	100
	Kongwa	2	3.3 (0.7, 13.7)	63	96.7 (86.3, 99.3)
	Dodoma MC	2	1.8 (0.25, 12.8)	85	98.1 (87.2, 99.75)
	Chemba	0	0	86	100
Arusha	Meru	0	0	91	100
	Karatu	15	18.52 (4.5, 52.4)	65	81.5 (47.6, 95.5)
	Ngorongoro	0	0	10	100
	Longido	1	1.19 (0.1, 10.1)	82	98.8 (89.9, 99.9)
Tanga	Korogwe DC	3	5.1 (1.2, 19.3)	63	94.9 (80.7, 98.8)
	Handeni	16	28.7 (18.5, 41.7)	42	71.3 (58.3, 81.5)
	Mkinga	5	6.3 (2.6, 14.8)	62	93.7 (85.3, 97.4)
	Korogwe TC	6	9.1 (2.9, 25.1)	59	90.9 (74.9, 97.1)
Pwani	Bagamoyo	5	5.95 (2.2, 15.4)	94	94.1 (84.6, 97.9)
	Kibaha	0	0	54	100
	Mkuranga	4	7.7 (2, 25)	50	92.3 (74.9, 97.9)
	Rufiji	6	7.2 (1.8, 24.6)	81	87.5 (70.6, 95.3)
Mtwara	Mtwara DC	0	0	88	100
	Newala	1	1.2 (0.1, 9.95)	83	98.8 (90,99.9)
	Masasi	4	5.3 (1.1, 22.4)	73	94.7 (77.7, 98.9)
	Tandahimba	2	2.2 (0.5, 9.4)	88	97.8 (90.6, 99.5)
Iringa	Iringa	29	34.3 (20.3, 51.8)	58	65.7 (48.2, 79.7)
	Mufindi	12	12.8 (6.9, 22.5)	82	87.2 (77.5, 93.1)
	Mafinga MC	42	45.9 (27.9, 65)	50	54.1 (35, 72.0)
Tabora	Igunga	4	5 (1.1, 20.7)	75	94.9 (79.3, 98.9)
Rukwa	Sumbawanga	7	7.9 3.6, 16.5)	82	92.1 (83.5, 96.5)
	Nkasi	20	25.6	58	74.4
Kigoma	Kibondo	4	5.07 (1.9, 12.8)	81	94.93 (87.2, 98.1)
	Kasulu	2	2.3 (0.3, 16.7)	79	97.8 (83.3, 99.7)
	Kigoma MC	5	6.26 (2.3, 15.7)	78	93.7 (84.3, 97.7)
	Uvinza	0	0	59	100
Kagera	Karagwe	4	9.2 (1.8, 35.8)	39	90.9 (64.1, 98.2)
	Kyerwa	1	1.3 (0.1, 11.1)	71	98.7 (88.9, 99.9)
Mara	Tarime	0	0	66	100
	Musoma	5	5.95 (1.9, 17.2)	79	94.1 (82.8, 98.1)
	Bunda	0	0	74	100
	Rorya	1	1.5 (0.17, 12.4)	64	98.5 (87.7, 99.8)
	Butiama	3	3.9 (0.9, 16.2)	73	96.1 (83.8, 99.1)
Manyara	Hanang	2	2.6 (0.6, 10.9)	87	97.4 (89.2, 99.4)
	Mbulu	4	5.3 (1.7, 15.5)	71	94.7 (84.5, 98.3)
	Simanjiro	7	8.4 (3.8, 17.6)	74	91.7 (82.4, 96.3)
	Kiteto	0	0	34	100
Njombe	Makete	17	18.4 (11.4, 28.4)	74	81.6 (71.6, 88.6)
	Njombe	72	76.6 (61.8, 86.9)	22	23.4 (13.1, 38.2)
Katavi	Mpanda TC	1	1.3 (0.2, 10.9)	74	98.7 (89.1, 99.9)
	Mpanda DC	1	1.6 (0.2, 12.2)	63	98.5 (87.8, 99.8)

a) Functional handwashing facilities were said to be present in households where any one of the following were observed: a sink with tap, a plastic container with tap, a mobile or basic bucket, or a Tippy Tap.
b) 95% confidence intervals are present where applicable. In some cases, standard error cannot be calculated due to strata with a single sampling unit as a result of missing values where observation was not possible; this occurred at 637 households, although the reasons remain unclear.

Key Performance Indicator #3: Number of Villages in the Service Areas of local sanitation providers

This indicator is set to measure the outcomes of sanitation marketing activities conducted by the campaign. The process evaluation set to measure this indicator with the Community questionnaire, which involved interviews with the village leader. However, due to problem with the Community Survey we were unable to analyse these data (See Annex IV).

Key Performance indicator #4: Number of sub-villages/villages with signed declarations and deadline to improve household sanitation and hygiene.
This indicator was set to measure the progress of CLTS activities conducted by the campaign. The process evaluation set to measure this indicator with the Community questionnaire, which involved interviews with village leaders. However, due to problem with the Community Survey we were unable to collect and analyse these data (See Annex IV).

5.3 Socio-demographics

5.3.1 Characteristics of Respondents and households

Household survey respondents came from 4,071 households across 46 districts in rural areas where the Campaign was implemented. The vast majority of respondents indicated that they were either the head of household (58.4%, 95% CI: 55.4-61.3) or a spouse to the head of household (31.3%; 95% CI: 29.3-33.5). Responses came from a nearly equal ratio of males and females – 49.3% of respondents were male (95% CI: 46.5-52), while 50.8% were female (95% CI: 48-53.5) – and the median age of respondents was 40 years old (Interquartile range: 30-54 years); see Figure 5-1 for an age distribution of respondents.

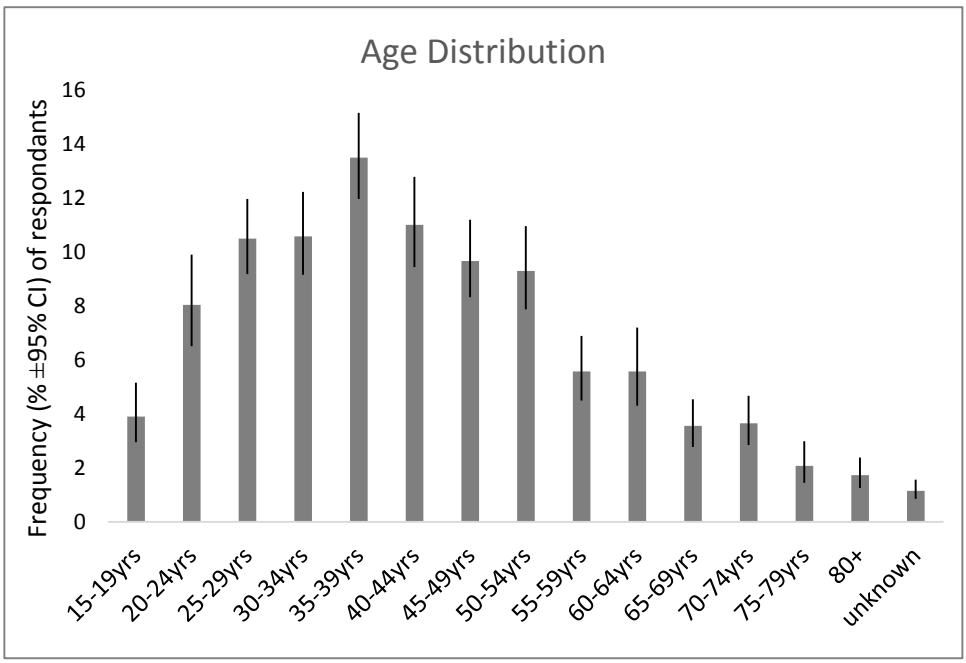


Figure 5-5-1 Age distribution of household survey respondents

The majority of participants (67.4%, 95% CI: 64.9-69.2) responded that primary school was their highest level of education achieved, while 23.6% (95% CI: 21.26-26.06) had never attended any school. Furthermore, the majority of participants were in a monogamous marriage (66.8%, 95% CI: 64.3-69.2), and the vast majority (82.4%, 95% CI: 79.1-85.3) worked in agriculture and/or livestock. The median number of household members was 5 (interquartile range: 4-7), and the median number of children under 5 years old per household was 1 (interquartile range: 0-2). Nearly all households visited were either owned by an occupant (71.2%, 95% CI: 67.5-74.7) or by a family member of the occupant(s) (22.8%, 95% CI: 19.5-26.5). Data on household survey respondent characteristics are presented in tables in Annex V.

5.4 Community Conditions

5.4.1 Message exposure and awareness of community activities

When asked about the frequency of exposure to various media sources, 81.9% (95% CI: 79.7-83.9) and 83.7% (95% CI: 80.3-86.6) of respondents indicate that they never read the newspaper or watch television (Figure 5-2). Conversely, only 34.7% (95% CI: 34.5-37.9) of respondents said they never listen to the radio, while 39.7% (95% CI: 36.3-43.2) said they listen to the radio almost every day.

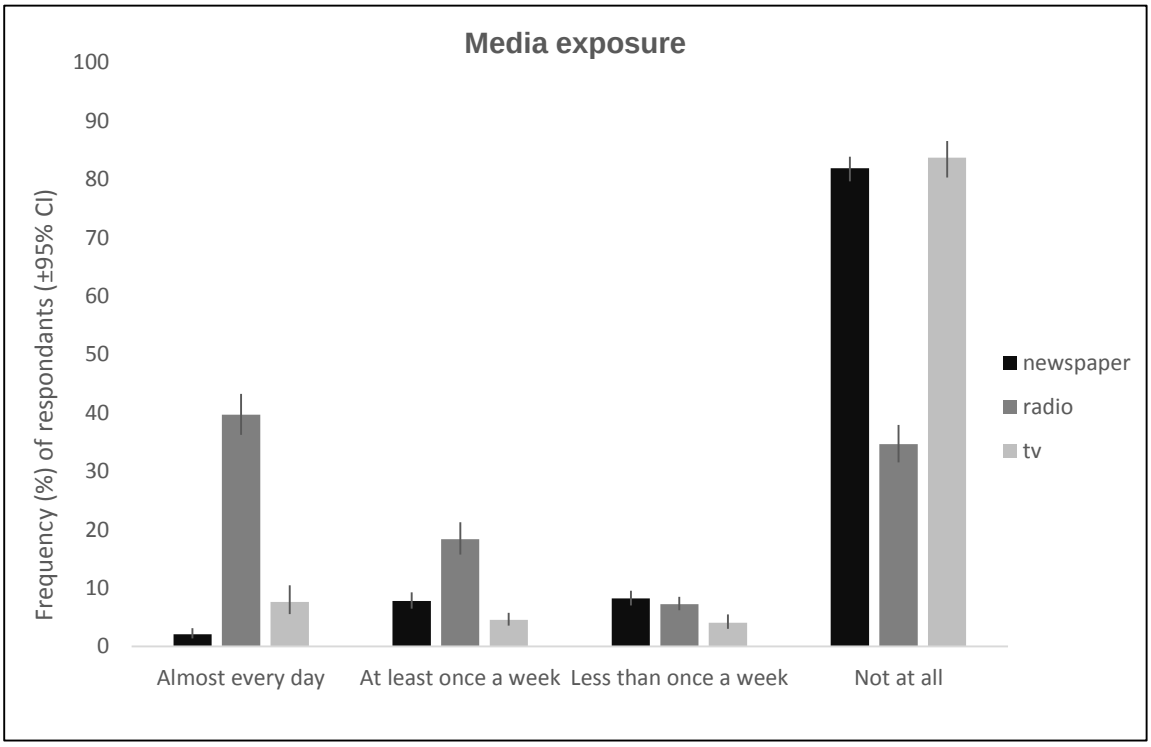


Figure 5-5-2: Frequency of respondents' exposure to various media sources

60.6% of respondents (95% CI: 57.3-63.8) claim to be aware of sanitation and hygiene promotional events in their community. Village leaders, health officers, and advertisements in the village were the most common sources of information about community sanitation and hygiene promotional events, informing 44.9% (95% CI: 41.3-48.5), 27.8% (95% CI: 24.1-31.8), and 19.1% (95% CI: 17.2-21) of respondents, respectively. Other sources of information such as radio, neighbours, family, friends, community meetings, or religious groups informed less than 10% of respondents each. When asked specifically if they had heard of the National Sanitation Campaign in the last 6 months, 61% (95% CI: 57.6-64.4) of respondents stated that they had. Among these individuals, the most important sources of information about the NSC were radio, community events, and community health workers, informing 37.1%, 31.8%, and 44.7% of respondents who had heard about the NSC, respectively (Figure 5-3).

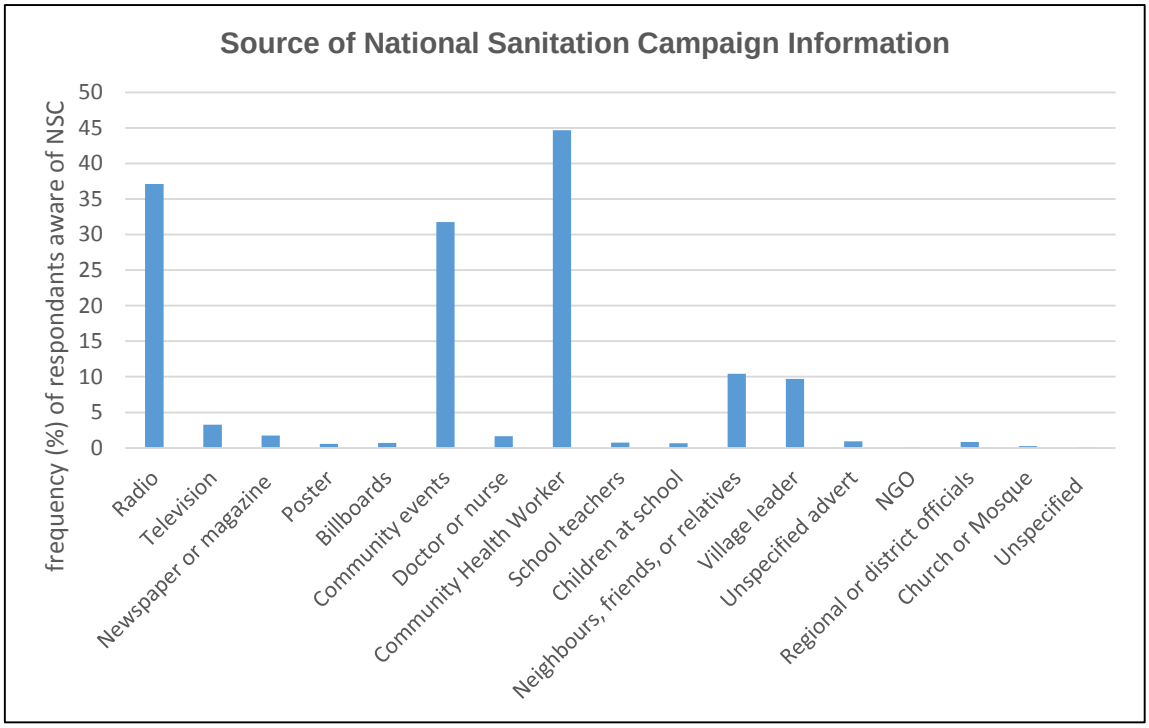


Figure 5-5-3 Source of information about NSC

5.4.2 Participation in social activities and/or community events

Among respondents to the household survey, involvement in community organisations was generally low (93.4%; 95% CI: 92.3-94.4). While respondents were most commonly members of village government and village CLTS committees, these only accounted for by 3.4% (95% CI: 2.7-4.3) and 1.9% (95% CI: 1.4-2.6) of the population, respectively. Other common village organisations were each participated in by less than 1% of the population.

When asked about attendance at community events in the past year, such as neighbourhood, village, farmers' cooperative, saving or self-help groups, or parent meetings, participation was considerably higher. Neighbourhood meeting attendance was the highest, with 41.3% (95% CI: 38.6-44.1) of respondents indicating that they had attended some or all of these meetings in the past year. Similarly, village meetings were attended by 40.9% (95% CI: 38.4-43.5) of the population in the past year. Attendance at farmers' cooperative, savings or self-help group, and parent meetings were lower, with participation in each at 21.91% (95% CI: 19.7-24.3), 15.2 (95% CI: 13.2-17.5), and 23.4% (95% CI: 25.9-21.1), respectively.

In terms of participation in sanitation and hygiene promotional meetings, 41.4% (95% CI: 39-43.9) of respondents stated that either they themselves or a family member had attended one of these meetings in the past year. Among these, the median number of meetings attended was 3 (interquartile range: 2-4). Membership in an organisation or group working in sanitation and hygiene was quite low, with participation at only 6.6% (95% CI: 5.6-7. 7) of the population.

5.4.3 Social communication

To understand the importance of sanitation in the targeted communities we asked respondents the frequency with which they discuss sanitation issues within the household and their community. Table 5-6 shows that approximately half of respondents discusses sanitation improvements within the households frequently or very frequently (46.3%), whilst 12.1% never discusses sanitation improvements within the households.

Table 5-6: Reported frequency of discussing sanitation improvements within households

Do you discuss sanitation improvements in your household?		
	n	**% (95% CI)**
Very frequently	270	8.6 (6.5, 11.2)
Frequently	1,387	37.7 (34.6, 40.9)
Occasionally	465	12.1 (10.2, 14.2)
Rarely	780	19 (16.4, 22)
Very rarely	539	10.5 (9, 12.2)
Never	629	12.1 (10.6, 13.8)

Similar results are reported for discussing sanitation improvements with other community members (Table 5-7).

Table 5-7: Reported frequency of discussing sanitation improvements within the community

Do you discuss sanitation improvements with other members of the community?		
	n	**% (95% CI)**
Very frequently	255	6.2 (4.8, 8.1)
Frequently	1,036	26 (22.9, 29.4)
Occasionally	501	13.5 (11.5, 15.7)
Rarely	846	22.4 (19.9, 25.1)
Very rarely	514	11.8 (10.3,13.5)
Never	918	20.2 (17.6, 23)

5.4.4 Motivation for change

Outcome Expectation

When asked what they believe to be most important benefits from having an improved toilet, getting rid of diseases was selected by a vast majority (82.1%) of respondents (95% CI: 80.5-83.5) (Figure 5-4). Following this, the second and third most common responses were personal safety and improve the health of my children; these were selected by 30.1% (95% CI: 27.9-32.4) and 27.9% (95% CI: 25.8-30.1) of respondents, respectively.

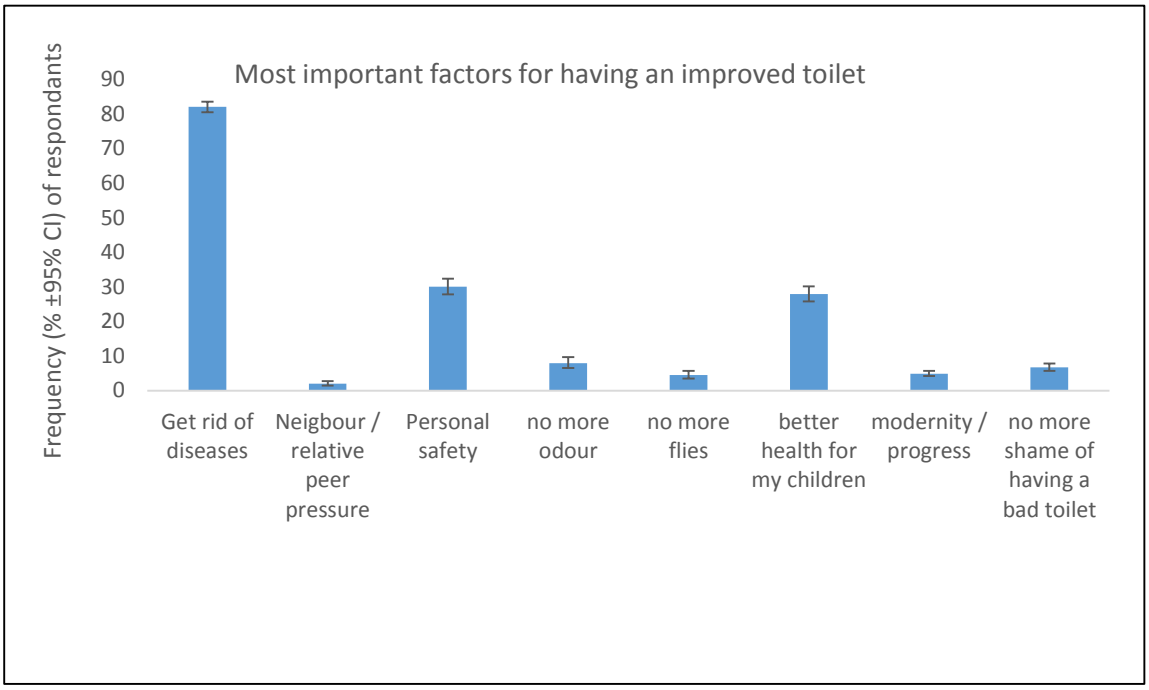


Figure 5-5-4: Most important factors for having an improved toilet

Participants were asked to indicate the degree to which they either agree or disagree that using or building an improved toilet is good for one's health, good for one's safety, and would save money (Figure 5-5).

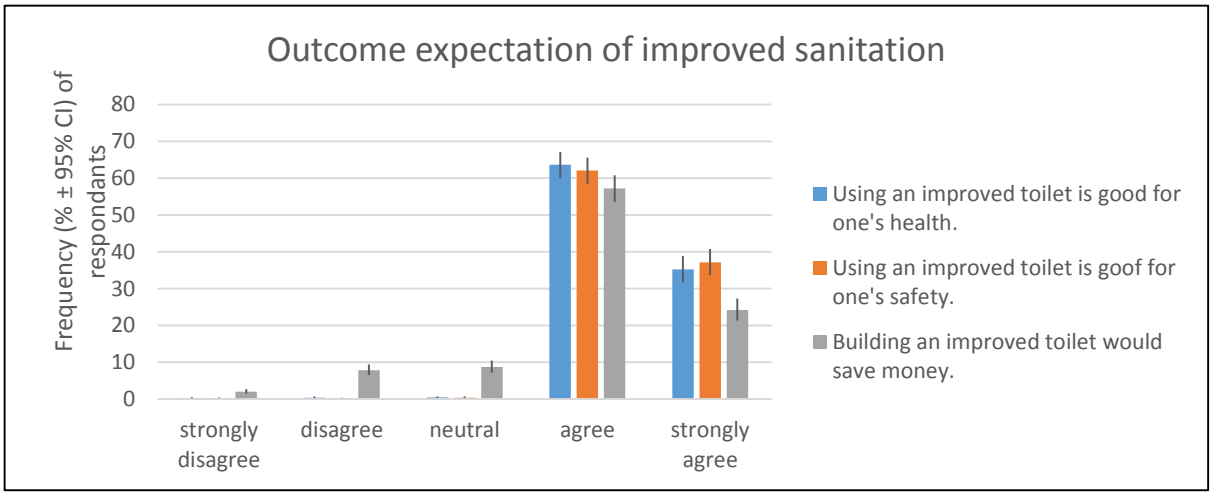


Figure 5-5-5: Expectations of outcomes from improved sanitation

A composite outcome expectation score was generated from the sum of these responses using the following scale: strongly disagree = -2, disagree = -1, neutral = 0, agree = +1, and strongly agree = +2. The distribution of outcome expectation scores is presented in Figure 5-6, where possible values range from -6 (strongly disagree to all statements) to +6 (strongly agree to all statements). The expectation of a positive outcome from building or using an improved toilet appears to be quite high: approximately 86% of respondents scored between +3 and +6. Among these, respondents most commonly scored +3 (45.8%; 95% CI: 42.3-49.3).

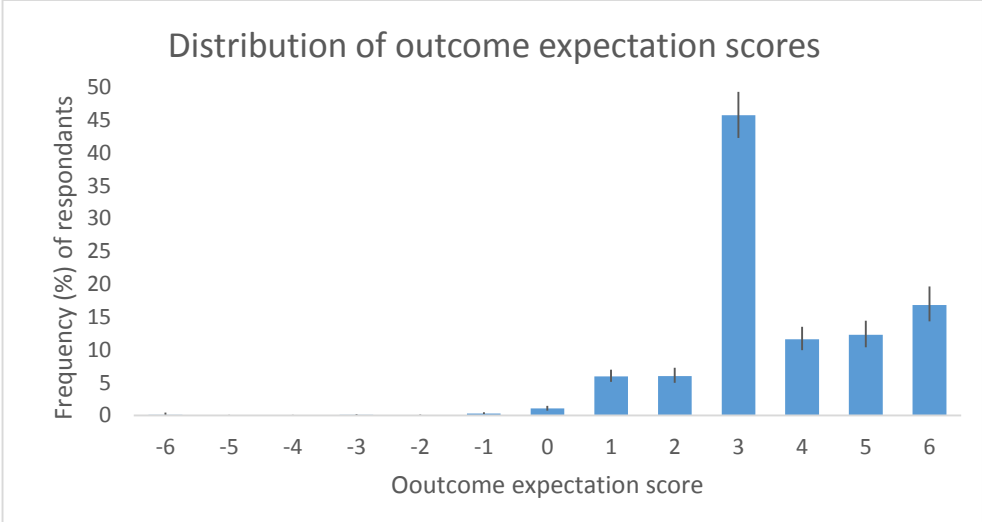


Figure 5-5-6: Distribution of outcome expectation scores

5.4.5 Social norms regarding sanitation

Participants were asked to respond to two items on social norms regarding sanitation; the first asked whether your neighbours having an improved toilet is important for your own health, while the second asked if it is important to have a clean and safe toilet for visitors. From these, it appears that having a clean, improved toilet is an important social norm among respondents of this survey – approximately 87% of respondents either agreed (58.5%; 95% CI: 55-62) or strongly agreed (28.6%; 95% CI: 25.4-32) to the first item, while approximately 97.28% of

respondents either agreed (64.8%; 95% CI: 61-68.5) or strongly agreed (32.5; 95% CI: 28.9-36.2) to the second.

5.4.6 Social norms regarding open defecation

Participants were asked to respond to three items in order to understand the acceptability of open defecation. The first assessed the acceptability of children defecating openly; the second assessed the acceptability of adults defecating openly; and the third assessed the acceptability of anyone defecating openly in the case where no toilet can be found. In all cases, an overwhelming majority of participants disagreed to these statements; thus, it appears that the social norms within evaluation communities are non-accepting of open defecation. Approximately 93% of respondents either disagreed (52.4%; 95% CI: 49.2-55.6) or strongly disagreed (40.2%; 95% CI: 36.9-43.6) that it is acceptable for children to defecate openly; roughly 97% of respondents either disagreed (43; 95% CI: 40.2-45.7) or strongly disagreed (53.6%; 95% CI: 50.8-56.4) that it is acceptable for adults to defecate openly; and lastly, approximately 93% of respondents either disagreed (45.5%; 95% CI: 42.7-48.4) or strongly disagreed (47.5%; 95% CI: 44.7-50.3) that it is acceptable to defecate openly when one cannot find a toilet (Figure 5-7).

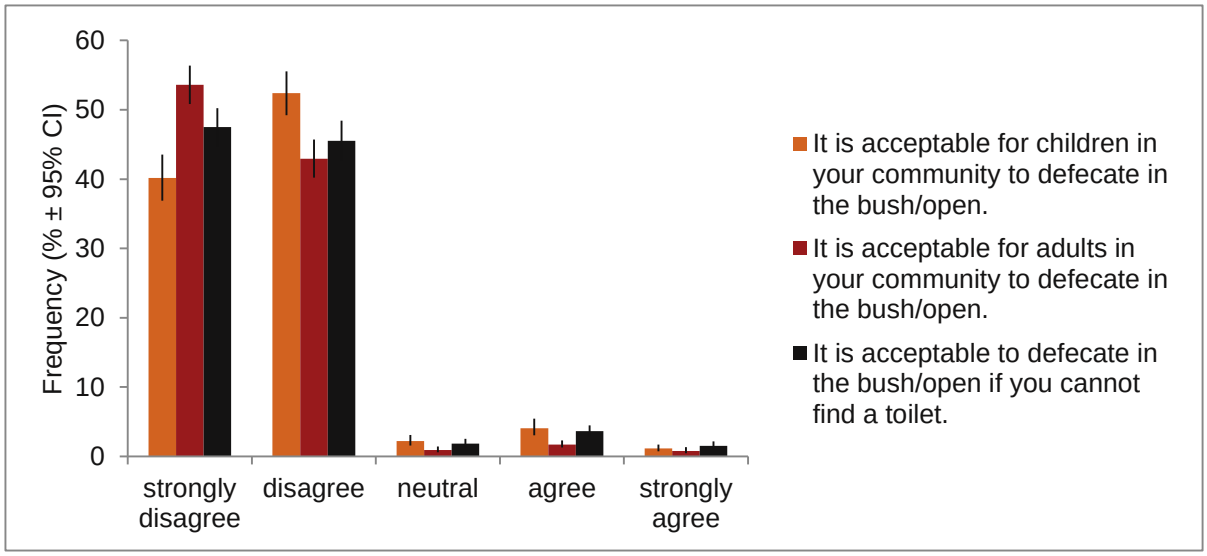


Figure 5-5-7: Perceptions on open defecation

Threat Severity

In order to gauge the perceived threat severity of diarrhoeal illness and poor sanitation, respondents were asked to indicate whether they agreed or disagreed to a range of statements (Figure 5-8).

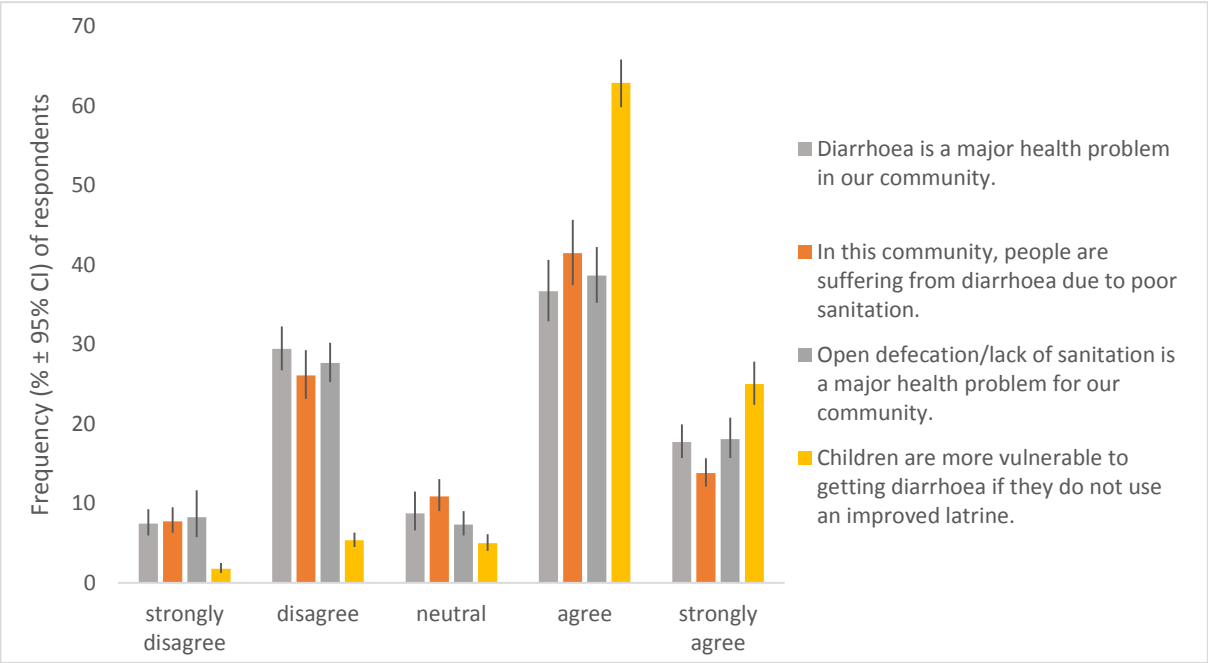


Figure 5-5-8: Perceptions of threat severity from diarrhoeal disease and poor sanitation

Similar to the approach used above to understand expectations of using or building an improved toilet, a composite threat severity score was created using the sum of these responses and the following scale (Figure 5-9): strongly disagree = -2, disagree = -1, neutral = 0, agree = +1, and strongly agree = +2. In general, more respondents seem to agree to the statements than disagree, signifying an awareness of threat from diarrhoeal illness and poor sanitation; approximately 50% of respondents scored between +3 and +8, while +4 was most common threat severity score (23.3%; 95% CI: 19.9-27.0).

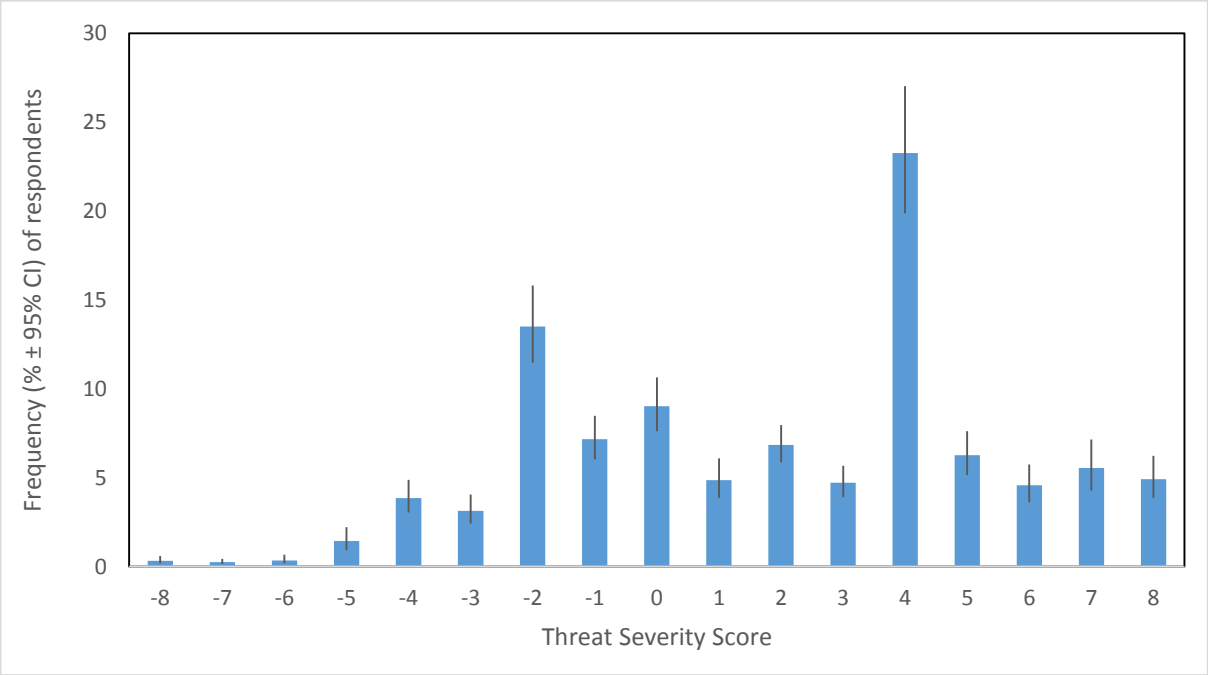


Figure 5-5-9: Distribution of threat severity score

5.4.7 Opportunity

Availability of sanitation services

When asked about perceptions on availability and supply of sanitation services in their community, respondents were split on whether sanitation providers, building materials, and information on toilet design were easy to find in their community, and whether they had toilet designs that would work well for their families (Figure 5-10). For each of these items, a similar pattern in perceptions was observed; respondents most frequently agreed with the statements, while those who disagreed and strongly disagreed gave the second and third most frequent responses.

When combining the strongly disagree with disagree categories, as well as the strongly agree with agree categories, it becomes clear that in terms of perceptions on whether building materials for toilets are easily available, more respondents disagreed (~55%) than agreed (~39%) to the statement. Conversely, more respondents agreed than disagreed that both sanitation providers (~58% agreed vs. ~37% disagreed) and suitable sanitation facility types (~61% agreed vs. ~32% disagreed) were easily available in their community. With regard to the availability of toilet design information, respondents agreed (~46%) and disagreed (~45%) in roughly equal frequencies.

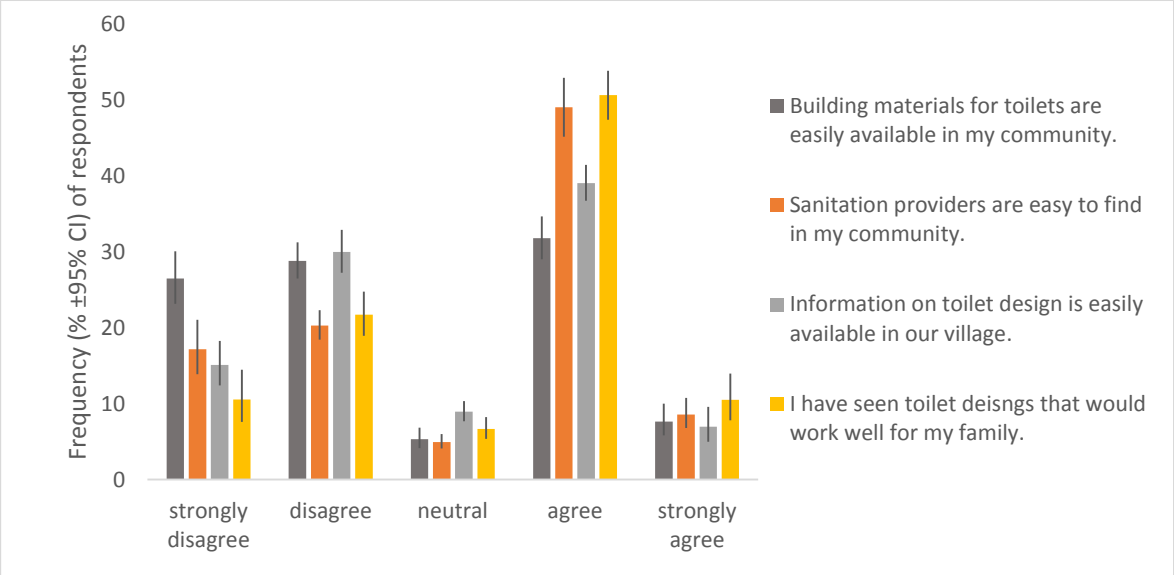


Figure 5-5-10: Perceptions on availability and supply of sanitation services

5.4.8 Ability

Sanitation constructions skills

Participants were asked whether or not they had access to someone in their family or community skilled in sanitation facility construction. While the majority of respondents knew someone in their family capable of building a simple pit latrine (60.6%, 95% CI: 56.9-64.1), only 16.7% of respondents (95% CI: 14.8-18.8) knew someone in their family capable of building a latrine with a concrete slab. However, 60.6% of respondents (95% CI: 57-64.1) knew someone in their community capable of building a latrine with a concrete slab. Thus, it appears that over half of respondents knew someone skilled in sanitation facility construction.

Affordability of sanitation services

Participants were asked to respond about the affordability of building or improving sanitation facilities (Figure 5-11). The majority of respondents (~57%) did not find building a traditional pit latrine to be very expensive, although ~64% of participants disagreed that they would be able to save enough money to build or improve their toilet. Furthermore, ~69.6% of respondents disagreed that family outside the community would be willing to help pay for the costs of building or improving their toilet.

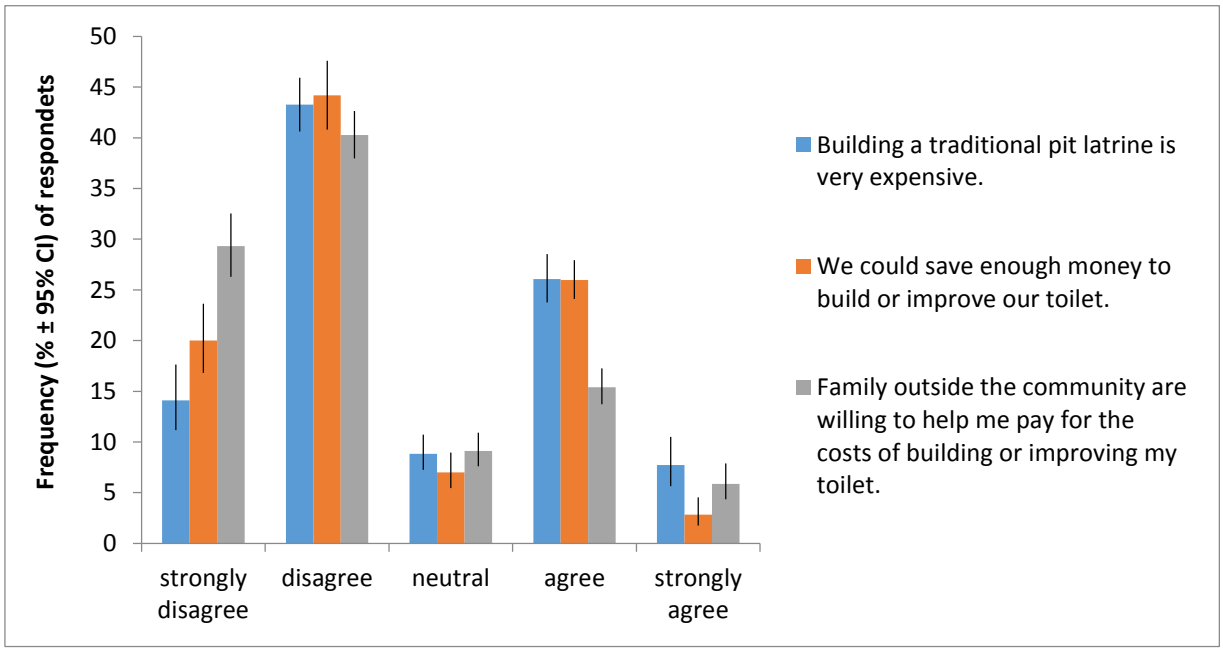


Figure 5-5-11: Perceptions on affordability of building improved latrines

5.5 Behavioural Outcomes

5.5.1 WASH conditions: Sanitation

As reported in Key Performance Indicator #1, we observed improved sanitation facilities in 24.8% (95% CI: 21.5-28.4) of households (Table 5-8). Our household survey enumerators classified the sanitation facility as improved if they observed any of the following: flush or pour flush toilets to a piped sewer system, septic tank, or pit latrine; Ventilated Improved Pit latrines; improved pit latrines; and composting toilets. Conversely, we observed unimproved sanitation facilities in 75.2% (95% CI: 71.6-78.5) of households. Unimproved sanitation facilities types observed were: traditional pit latrines; flush or pour flush toilets to something other than a piped sewer system, septic tank, or pit latrine; and households without any toilet.

Among all households observed, three common sanitation scenarios were observed. The most common sanitation facility observed was a traditional pit latrine; this was observed in 57.33% of households (95% CI: 54.5-60.1). Following this, the second most commonly observed sanitation scenario were households without any toilet facility – observed in 17.7% (95% CI: 15.3-20.2) of cases. Lastly, improved pit latrines were observed in 14.3% of households (95% CI: 12.4-16.4). Together, these three account for nearly 90% of all households observed.

Table 5-8 Observed sanitation facility types

Sanitation facility type	Frequency (n)	Weighted % (95% CI)
Flush/pour flush to piped sewer system	67	1.1 (0.8, 1.5)
Flush/pour flush to piped septic tank	41	1.1 (0.5, 2.3)
Flush/pour flush to pit latrine	226	5.1 (3.8 ,6.7)
Ventilated improved pit latrine	115	3.1 (2, 4.8)
Improved pit latrine	641	14.3 (12.4,16.4)
Composting toilet/EcoSan	3	0.1 (0, 0.3)
Total Improved	1,093	24.8 (21.5, 28.4)
Traditional Pit latrine	2,347	57.3 (54.5, 60.1)
Flush/pour flush to elsewhere	10	0.3 (0.1, 0.6)
Bucket/plastic bag	0	0
No toilet	621	17.7 (15.3, 20.2)
Total Unimproved	2,978	75.2 (71.6, 78.5)

Among districts included in this evaluation, the proportion of households observed to have improved sanitation facilities varied considerably. The percentage of households with improved sanitation ranged from 4.2% (95% CI: 1.3-13) in Newala district to 89.6% (9% CI: 78-95.4) in Njombe district. Annex V presents observed sanitation facility types by district.

Characteristics of observed sanitation facilities

With regards to sanitation facility location, approximately 97% of all observed households used a latrine outside the home. Among households with observed sanitation facilities, 43.5% had a latrine between 3-5 metres from the house, 28.9% had a latrine between 6-9 metres from the house, and 24.9% had a latrine more than 10 metres from the house.

Enumerators also made observations on specific construction characteristics of the sanitation facilities – these are summarised in Table 5-9. 55.7% of sanitation facilities observed had a slab, which was most commonly made of either cement (37.5%) or polished/compacted earth (25.1%). The main material of the latrine floor was most commonly loose earth (34.6%), cement (25.8%), polished/compacted earth (21%), or wood (16.3%). Only 33.7% of observed latrines were capable of being washed with water, while only 44.17% were constructed s as to prevent flooding. Figure 5-12 presents the observed frequencies of a range of additional special features.

Table 5-9: Observed Sanitation Facility Characteristics

Variable		Frequency (n)	%a
Does the latrine have a slab?			
	Yes	2,172	55.7
	No	1,269	43.7
	Observation not possible	21	0.7
If yes, what material is the slab made of?			
	Wooden	269	12.6
	Plastic	12	0.3
	Cement	836	37.5
	Earth: loose	304	14.1
	Earthen: polished/compacted	541	25.1
	Wood and concrete	196	9.9
	Observation not possible	14	0.5
What is the main material of the latrine floor?			
	Wooden	330	16.4
	Plastic	5	0.1
	Cement	968	25.8
	Earth: loose	1,266	34.6
	Earthen: polished/compacted	817	21
	Metal	3	0.04
	Tiles	24	0.8
	Ceramic	3	0.1
	Observation not possible	46	1.2
Can the latrine floor be washed with water?			
	Yes	1,160	33.7
	No	2,278	65.6
	Observation not possible	24	0.7
Does the floor prevent flooding?			
	Yes	1,520	44.2
	No	1,893	54.6
	Observation not possible	49	1.2
Which of the following special features are observed in the latrine? (n=3450 for each row)			
	Foot rests	1,858	45.7
	Seat	325	7.9
	Partially enclosed wall	1,242	36.4
	Fully covered roof	1,587	46.3
	Partially covered roof	1,259	35.9
	Curtain	1,029	30.3
	Lockable door	943	25.1
	Cover over squat hole	364	9.2
	Water Seal	129	3.3
	Fence	21	0.7
	Path	3,261	91.8
	Other	38	1.4

Cannot estimate SE because of strata with single sample unit; given the sampling methodology employed, sub-population analyses prevent the calculation of SE in some cases where any of the included data are from a stratum with a single primary sample unit involved in the sub-analysis.

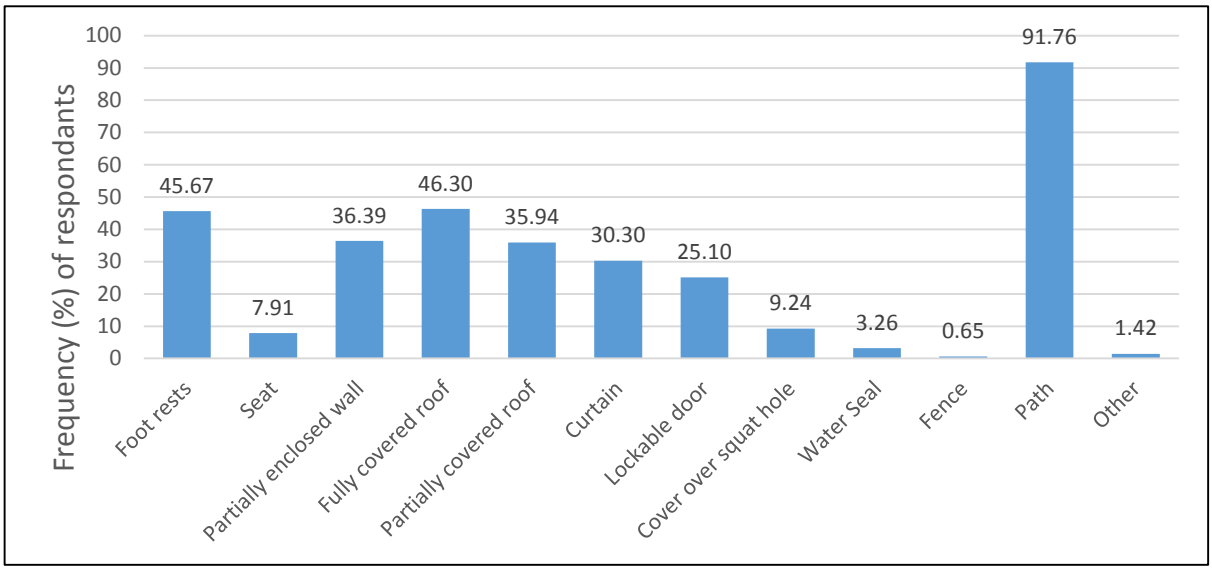


Figure 5-5-12 Observation frequencies of a number of special latrine features

Sanitation facility sharing

We found that the majority of households with observed sanitation facilities did not share with any other households (86.2%); see Table 5-10. Among households that did share their sanitation facilities, the majority did so with 5 households or less (81.9%), which were most commonly shared between neighbours they know (61%).

Table 5-10 Sanitation Sharing

Variable	Frequency (n)	%a
Do you share this toilet facility with other households?		
Yes	483	13.8
No	2,953	86.2
How many households share this sanitation facility?		
5 or less households	411	81.9
More than 5 households	44	7.5
Do not know	28	10.6
Who share's this toilet facility? (row total=483)		
Family members	184	36.9
Neighbours I know	319	61
Others I don't know	44	12.6

Cannot estimate SE because of strata with single sample unit; given the sampling methodology employed, sub-population analyses prevent the calculation of SE in some cases where any of the included data are from a stratum with a single primary sample unit involved in the sub-analysis.

Sanitation facility conditions

We asked enumerators to comment on the condition of the observed sanitation facilities with regards to a number of different factors; these are summarized in Table 5-11. They found that the majority of latrines (53.9%) had a smell – 47.9% smelled only inside, while 5.9% smelled both inside and outside. While 58.82% of observed latrines were classified as clean by our enumerators, enumerators also reported that 52.2% had flies present inside the latrine – 45.5% were reported to have few flies, while 6.7% were reported to have many flies. Furthermore, 24.1% of observed sanitation facilities had faeces present outside the latrine pit. With regard to anal cleansing materials, the majority of latrines observed (55.7%) did not have any anal cleansing materials present inside the latrine. 40.9% did have water present, while other common materials were each present in less than 2.5% of all latrines visited. In terms of superstructure condition, 49.6% of latrines observed with a superstructure had no cracks present, while 22.7% did have cracks, and 17.8% had visible holes. The majority of latrines had no door (67.8%), and only 23.7% of latrines had doors that closed completely.

Table 5-11 Observed Sanitation Conditions

Variable	Frequency (n)	%a
Latrine smell		
No smell	1,753	46.1
Smell inside	1,477	48
Smell outside	219	5.9
Latrine cleanliness		
Clean	2,142	58.8
Not clean	1,307	41.2
Flies in latrine		
No flies	1,861	47.9
A few flies	1,364	45.5
Many flies	224	6.7
Are faeces present outside the latrine pit?		
Yes	770	24.1
No	2,664	75.4
Observation not possible	15	0.5
What anal cleansing materials are present inside the latrine? (row totals=3,450)		
Leaves or twigs	70	2.5
Water	1,474	40.9
Rag or cloth	7	0.2
Stones	12	0.6
Hygienic (toilet) paper	22	1.4
Another type of paper	35	1.1
Water bucket	23	0.5
Nothing	1,878	55.7
Observation not possible	36	0.7
Superstructure conditions		
No cracks	1,799	59.5
Cracks	592	22.7
Visible holes	501	17.8
Door conditions		
Door closes completely	851	23.7
Door closes, but not completely	157	3.5
Door locks	95	2.5
Door does not lock	111	2.5
No door	2,235	67.8

Child faeces disposal

Respondents were asked what they did to dispose of child faeces the last time their child defecated – these findings are presented in Figure 5-13. 68.6% of respondents said they disposed of the faeces into a toilet or latrine, while only 2 % claim to have disposed of the faeces in the open.

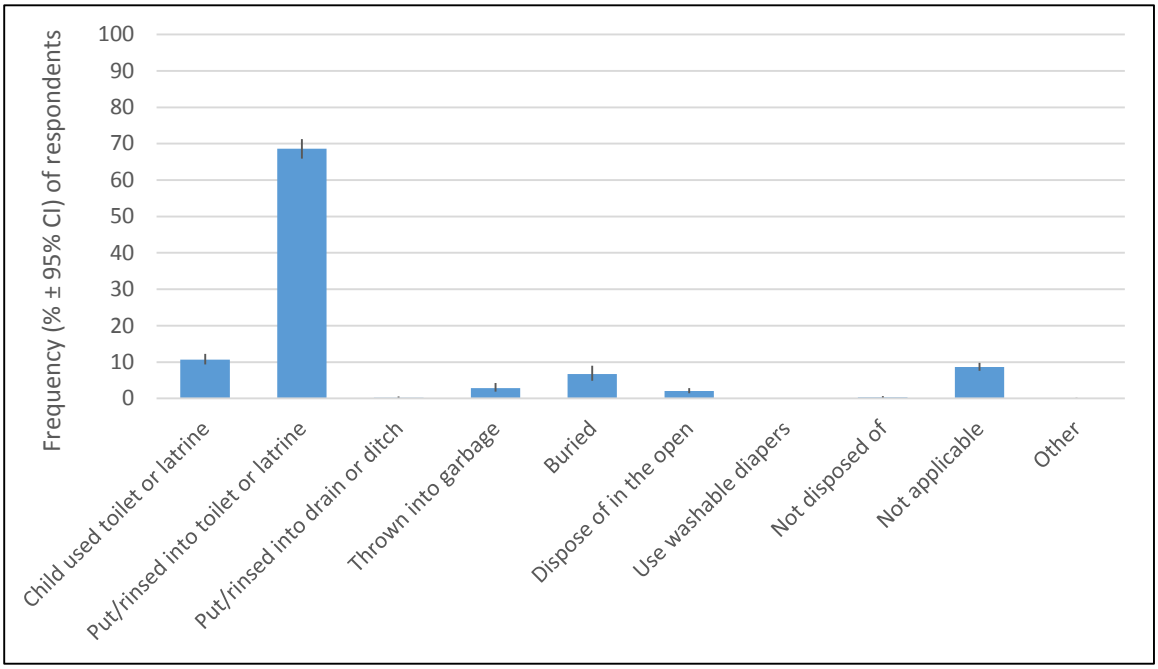


Figure 5-5-13 Child faeces disposal location

Latrine building info

The large majority of respondents either built their latrines themselves (44.7%), or used builders in the village (47.9%). When asked where they received information about the type of toilet facility to build, 53.4% stated that they gained the information from their neighbours or family. Following this, 32.8% of respondents received their information from local masons, while other sources of information were each reported to be used by less than 10% of the households sampled. Thus, it appears that neighbours, family, and local masons are the dominant information sources regarding latrine types. Interestingly, village CLTS committees, sanitarians, the radio, health workers, and village leaders provided information on latrine types to 7.6%, 2.8%, 1.8%, 7.7%, 0.5% of households sampled, respectively. When asked how much it cost to build the latrine, the median of all reported values was 20,000 Tanzanian Shillings (TZS), with an interquartile range of 5,000 to 50,000 TZS.

Sanitation Facility Improvements

Among respondents with a sanitation facility, only 16.4% had made any kind of improvement to their latrine in the past year. Within this group, the improvement most commonly made was to repair their latrine's superstructure – this was done to 50.2% of latrines with recent improvements. A summary of recent improvement made in the last 12 months is provided in Figure 5-14.

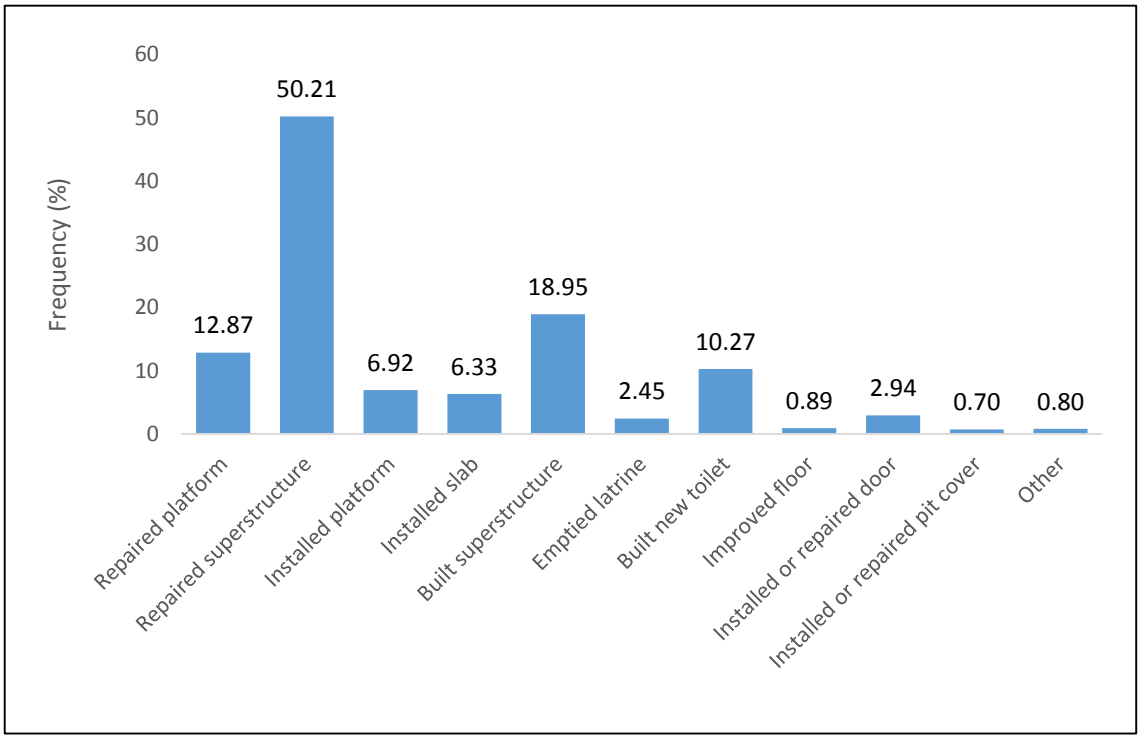


Figure 5-5-14 Frequency of latrine improvements made in the past year

When asked whether they were currently planning to build a new toilet or upgrade their existing one, 32.7% (95% CI: 30-35.5) of respondents stated that they were. Among this subgroup of respondents, only 28.6% had started saving money for the improvements. Furthermore, only 23.8% of respondents planning improvements to their sanitation facility had actually begun purchasing or acquiring materials for the improvements. With regard to specific improvement types, the most commonly planned improvement was to build a new latrine – this was reported by 72.5% of respondents planning to improve their sanitation facility. The next most commonly planned improvements were to repair their latrine's superstructure and build a new superstructure; these were reported by 13.2% and 8.7% of respondents intending to improve their sanitation facility, respectively.

5.7.2 WASH conditions: Drinking Water

Drinking Water Source

According the definition of improved water sources out by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation, 34.8% of respondents (95% CI: 31.2-38.5)

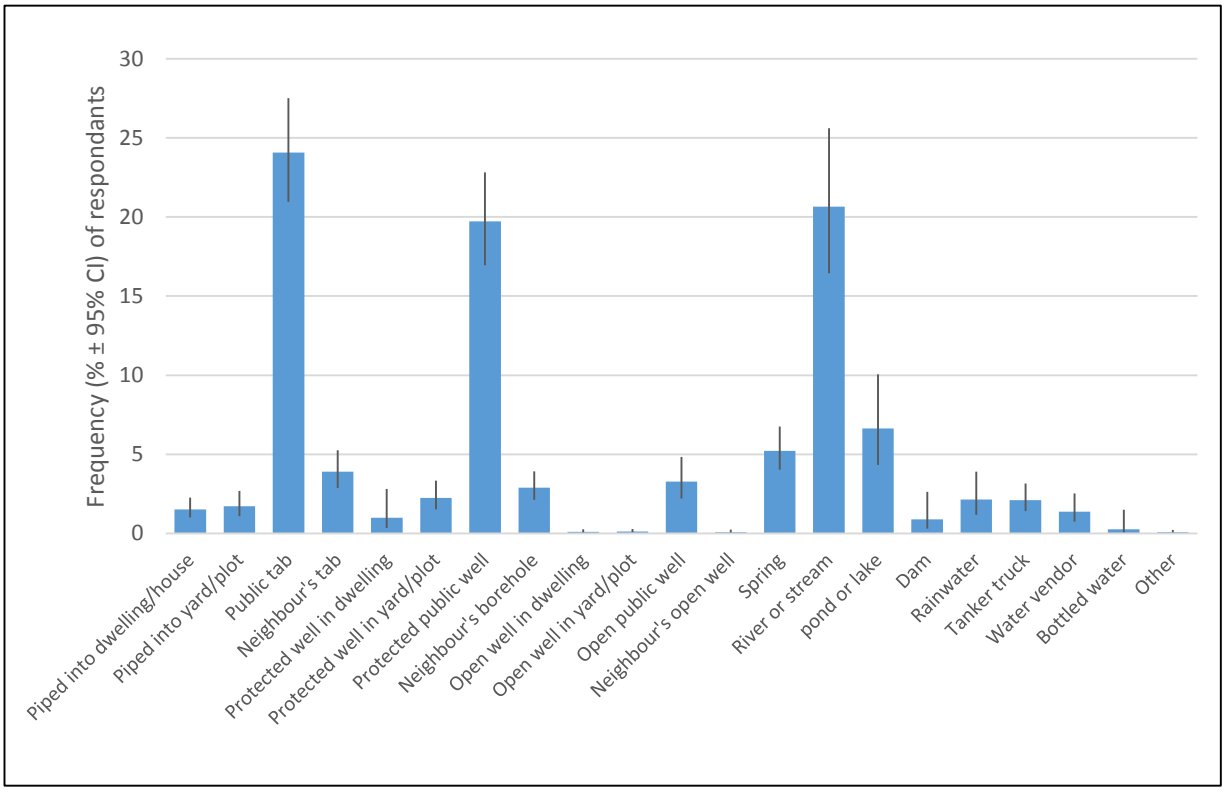


Figure 5-5-15: Frequency of use of specific water sources

reported to use an improved water source, while the remaining 65.2% (95% CI: 61.5-68.8) used unimproved sources. Figure 6-15 presents the frequencies of households using a particular water source for a number of different sources. Among the common water sources asked about in this evaluation, three were used considerably more than the others. A public tap (improved) was reported to be the main drinking water source for 24.1% (95% CI: 20.95-27.5) of respondents, 19.7% (95% CI: 16.9-22.8) reported to use a protected public well (improved), while 20.7% (95% CI: 16.5-25.6) reported that they use a river or stream (unimproved) as their main drinking water source.

Figure 5-16 presents the frequency distribution of the time required for a return trip between the household and drinking water source. The most common scenario was where respondents had to travel for less than 15 minutes in total to fetch water, although this group only accounts for 30.2% (95% CI: 27.2-33.4) of respondents. Alarmingly a 14.3% (95% CI: 12.2-16.8) of respondents reported to require over 90 minutes per return trip.

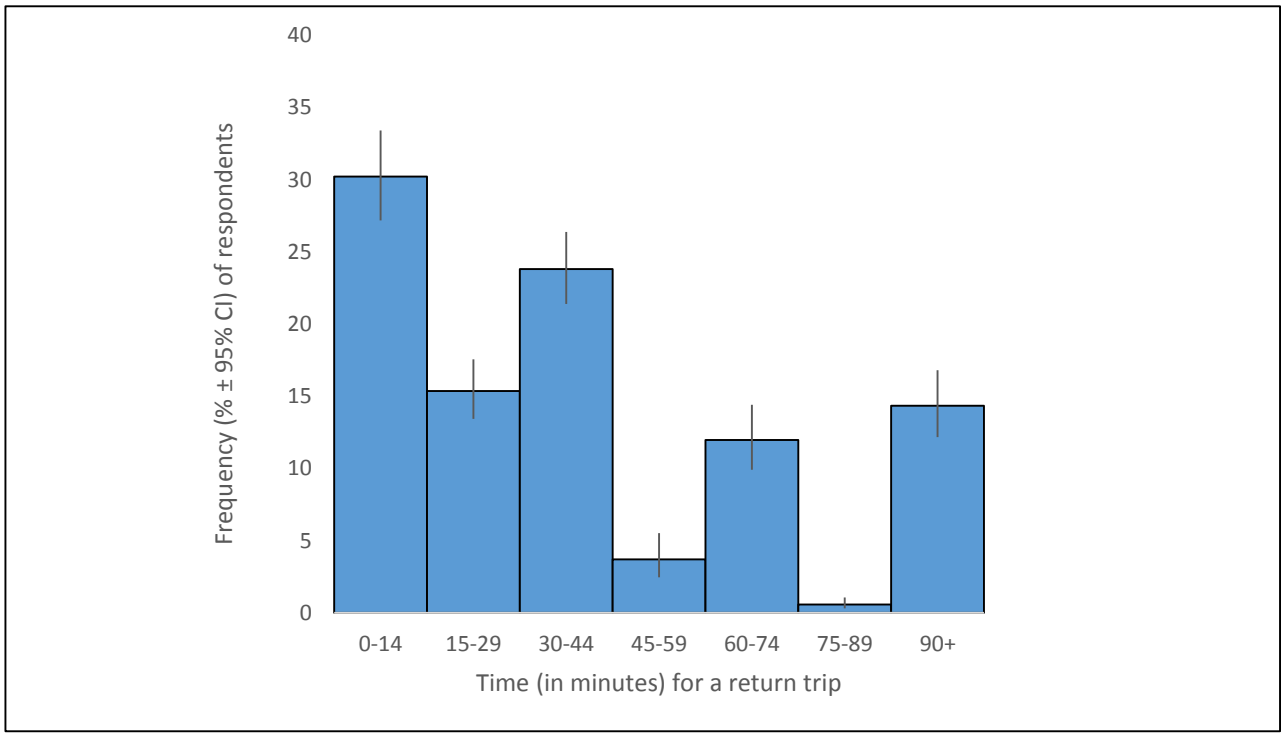


Figure 5-5-16: Frequency of distribution of distance between HH and water source, reported as minutes for return trip

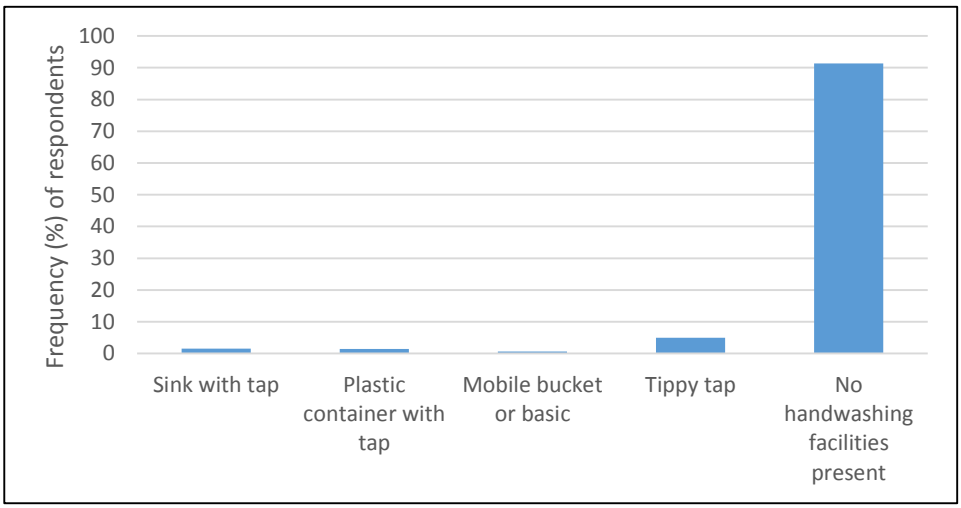


Figure 5-5-17: Handwashing facilities observed

When asked about measures used in their household to treat drinking water, the majority of respondents did not know – this was the case for 61.6% (95% CI: 57.7-65.4) of respondents. Apart from this, only one other response was common; 32.9% (95% CI: 29.3-36.6) of respondents boil their drinking water.

5.7.3 WASH conditions: Handwashing

Handwashing facility (HWF) type

As reported in Section 6.2 under Key Performance Indicator #2, HWFs were found present in only 8.6% of observed households. Figure 5-17 presents data on the frequency of observation of a variety of HWF types. See Annex V for a breakdown of HWF types by district.

Handwashing materials present

Among households with functional HWFs, enumerators also observed which additional handwashing materials were present (Table 5-12). The most commonly observed material was water, which was present in 83.8% of observed HWFs. Furthermore, bar soap and powered soap were observed in 36.7% and 24.0% of HWFs.

Table 5-12: Observed Handwashing material present at facility (n=335)

Material type	Frequency (n)	%
Water	289	83.8
Bar soap	101	36.7
Powdered soap	43	24
Liquid soap	45	13.6
Soapy water	13	2.2
Ash	1	0.3
None	18	5.9

We were able to estimate the percentage of households with HWFs available with soap and water, by combining data from the previous two items (Figure 5-18). In total only 3.7% of all respondents (95% CI: 2.8-5) had a HWF present with soap and water.

Figure 5-5-18: Frequency of HWF with/without soap and water

6. Results: School WASH component

6.1 School Characteristics

Seventy primary and secondary schools in 10 districts were included in the study. All but one of the schools were day schools. On average, there were similar enrolment rates for male and female students (305 males vs. 312 females). For all the 70 schools surveyed, there was a total of 43,191 students: 21, 364 boys and 21,827 girls. There was also a higher number of male learners with physical disabilities than females (106 males vs. 74 females). Within the past year of the current study, 69 of the 70 schools had benefited from at least one WASH related activity. The most common three WASH activities conducted in the schools surveyed were hygiene education (70%), construction or rehabilitation of latrines (53%) and provision of a water source (36%). Table 6-1, provided below presents a summary of the schools surveyed during the process evaluation.

Table 6-1: Overview of surveyed schools

Total number of schools surveyed	**70**
Average male enrolment	305
Average female enrolment	312
Average teacher to student ratio	1:42
Male learners with physical disabilities	106
Female learners with physical disabilities	74

6.2 Availability of sanitation facilities in schools

All surveyed schools had access to at least one toilet facility, though there was inadequate information on the functionality of these toilets at the time of the visits. A high majority (97%) of the facilities could also be classified as improved based on the JMP classification (Figure 6-1). The most common type of toilet facility used in the schools was the ventilated improved pit latrine (VIP) (53%) and the least was the traditional pit latrine (3%).

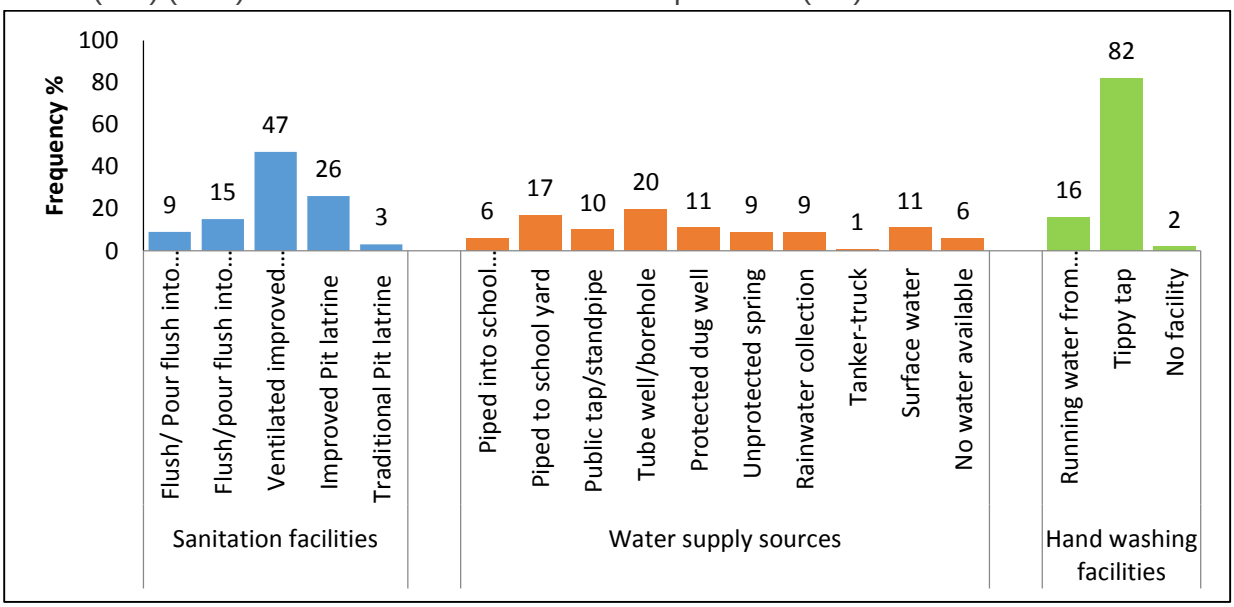


Figure 6-6-1: WASH facilities reported in schools

6.3 Determinants of adequate toilet facilities in Schools

The majority of the schools (89%) had one toilet block with an average of six compartments or drop holes, each one serving an average of 48 girls and 50 boys. Half the schools surveyed satisfied the MoHSW guidelines standard for student to male toilet compartment ratio of 1:50 boys, whilst only 43% of schools satisfied the ratio 1:40 girls (Table 6-2). If we consider the WHO/UNICEF (2011) guidelines standard for student to toilet compartment ratio, only 20% of the schools met the standard ratio of 1:25.

Table 6-2: Frequency of schools meeting WHO and MoHSW Toilet-student ratios

Guideline	Percentage of schools that meet guidelines	
	Boys	Girls
Tanzanian Government national guideline: 1 drop hole separate for 50 boys and 40 girls	50%	43%
WHO guideline: 1 drop hole separate for 50 boys and 25 girls	50%	20%

Less than half of the schools (44%) made provision of male urinals. In addition, only 37% of the schools reported to regularly provide anal cleansing materials for students. The majority of the schools (74%) had no facilities accessible to learners with physical disabilities.

Although more than half (59%) of schools surveyed were reported to have clean toilets, a far higher number of schools (95%) reported the toilets were smelly and (88%) reported that the school's toilet pits were full at the time of the survey (Table 6-3).

Table 6-3: Conditions of School Toilets

Parameter	% (n)
Provision of anal cleansing materials in schools	
Always	37 (26)
Sometimes	13 (9)
Never	50 (35)
Toilet cleanliness (reported)	
Clean	59 (41)
Not clean	41 (29)
Proportion of full pits	
All toilets	88 (62)
Some of them	6 (4)
Observation not possible	6 (4)

6.3.1 Water supply and hand washing facilities in Schools

The study found that 66% of the schools had a functional water supply system, though only 53% had a regular supply throughout the year. The most common source of water supply was the tube well/borehole (20%), while the least was the tanker truck service (1.4%, Figure 6-1). Of the main uses of water, less than a fifth (19%) of the schools used the sources for drinking while only 4% used them for hand washing (Table 6-4).

Table 6-4 Drinking water availability and adequacy of water provision in Schools

Variable	Frequency (N=70)	%
Availability of drinking water for students at time of visit	36	51.4
Schools with one or more water supply sources	66	94.3
Whether source of water supply was functional at the time of visit	46	65.7
How constant the water supply is		
Constant throughout the year	37	52.9
Not constant during one or more months of the year	23	32.9
Not constant during all months of the year	10	14.3
Sources of water supply in schools		
Piped water into school building	4	5.7
Piped water to school yard/plot	12	17.1
Public tap/standpipe	7	10
Tube well/borehole	14	20
Protected dug well	8	11.4
Unprotected dug well	0	0
Unprotected spring	6	8.6
Rainwater collection	6	8.6
Tanker-truck	1	1.4
Surface water	8	11.4
No water available in or near school	4	5.7
Main uses of water supply in schools		
Cleaning	24	34.3
Cooking	18	25.7
Drinking	13	18.6
Flushing and pour flushing toilets	11	15.7
Hand Washing	3	4.3
Any other purpose	1	1.4
Schools which have experienced problems with the water supply system since the beginning of the 2013/2014 financial year	42	60

6.3.2 Hand washing facilities in Schools

Of the 70 schools surveyed, more than half (52.9%) had one or more hand washing stations with an average number of six (Table 6-5). On average, there was a higher number of boys (77) than girls (65) per every functional hand washing station exclusive for boys and girls. The most common type of hand washing facility in the schools was the tippy tap (83%). Of the schools that had hand washing stations, the majority of these were functional for both boys (91%) and girls (88%). Although HWFs were available in the majority of schools, only 54% of schools reported to have water available at the HWFs and 35% to have soap available for students. In terms of accessibility, only 41% of hand washing facilities were accessible to learners with physical disabilities, whilst the majority of them (90%) were accessible to young learners.

Table 6-5 Handwashing in schools

Variable	Frequency	%
Hand-washing stations in schools	37	52.9
School with availability water at HWF	50	71.4
Schools with availability of soap at HWF	27	38.6
Observations in schools with hand washing stations		
Availability of water at hand-washing facilities at time of visit		
Yes, in all facilities visited	20	54.1
In some of facilities visited	7	18.9
No water was available	10	27
Availability of soap at hand-washing facilities at time of visit		
Yes, in all facilities visited	13	35.1
In some of facilities visited	11	29.7
No soap was available	12	32.4
Observation not possible	1	2.7
Number of hand washing facilities accessible to learners with physical disabilities	15	40.5
Number of hand washing facilities accessible to younger learners	23	62.2
Functional hand washing stations (exclusive for boys)	30	90.9
Functional hand washing stations (exclusive for girls)	29	87.9
Functional hand washing stations (communal – boys and girls)	15	41.7

6.1 Enabling environment for WASH in schools

6.1.1 School Health Clubs

Over 80% of schools reported having an active School Health Club (SHC) at the time of the survey, with an average membership of 33 learners. Less than half (47%) of the SHCs were reported to meet once a week, whilst 21% reported to meet monthly and 16% only few times within a year (Table 6-6). The main activities conducted in the SHCs were: latrine cleaning (53%) or promotion of hygiene behaviour and practices through art, drama and/or poetry either in the schools (63%) or in the community (40%).

Table 6-6 Availability and functionality of school health clubs

Variable	Frequency	%
Active school health clubs	58	82.9
Frequency of school health club members meeting		
On a weekly basis	27	46.6
On a monthly basis	12	20.7
A few times each year	9	15.5
Other	10	17.2
Type of WASH activities school health club does		
Promote good hygiene behaviour in the school through art, drama, and/or poetry	44	62.9
Cleaning latrines	37	52.9
Promote good hygiene behaviour in the community through art, drama, and/or poetry	28	40
Cleaning hand washing and drinking water containers	27	38.6
Collecting water	17	24.3
Treating water	17	24.3
Schools where the SHC does the following number of WASH activities		
No activity	12	17.1
One activity	15	21.4
Two activities	7	10
Three activities	14	20
Four activities	12	17.1
Five activities	8	11.4
Six activities	2	2.9

6.1.2 Monitoring of WASH activities in Schools

All schools had either a School Management Committee (SMC) or a Parent Teacher Association (PTA), or both, and 84% of these committees were active in school WASH (Figure 6-7). In the majority of these (67%), the SMC was engaged mainly in mobilising the community for WASH activities, or managing finance allocated for school WASH. Teachers were also engaged in a number of WASH activities, with the most commonly reported ones being teaching hygiene education (80%), organising the cleaning of latrines (74%) and preparing duty rosters for students for WASH activities (67%).

Table 6-7 Monitoring of WASH activities in Schools

Variable	Frequency	%
Availability of school management committee (SMC) or PTA	70	100
Number of schools with committee involved in WASH activities	59	84.3
WASH activities committee performs		
Mobilise community	47	67.1
Financial management	47	67.1
Supervise construction of school infrastructure	0	0
Number of schools where teachers are involved in WASH	69	98.6
WASH activities performed by teachers		
Educate community on WASH messages	46	65.7
Teach pupils hygiene messages	56	80
Buy water treatment products	4	5.7
Buy storage containers	18	25.7
Organize water collection	34	48.6
Organize water treatment	8	11.4
Organize cleaning of latrines	52	74.3
Buy latrine cleaning materials	21	30
Create duty rosters for water and /or sanitation tasks	47	67.1
Monitor water and/or sanitation facilities	25	35.7
Hire repair services	8	11.4
Other	7	10
WASH projects/programme conducted by organisations in schools within the past year		
Provided hygiene education	49	70
Provided water treatment technology	12	17.1
Built or improved latrines	37	52.9
Provided water source	25	35.7
Provided or built rainwater harvesting	13	18.6
Other	7	10

6.1.1 Roles and responsibilities for WASH activities based on duty rosters

Duty rosters for cleaning facilities were available in some of the schools, though only those for cleaning latrines were available in all the schools (97%). Less than 20% of schools had duty rosters for providing water treatment (Table 6-8). The display of duty rosters for WASH activities was uncommon, with more than 80% of all schools not displaying their rosters. Similarly, the promotion of good hygiene practices through the display of messages as posters was uncommon in schools (Table 6-8). In the majority of schools (83%), all students (boys and girls) were responsible for cleaning the latrines, though none of them was involved in de-sludging or emptying them.

Table 6-8 Duty roster roles and responsibilities

Variable	Frequency	%
Schools where duty rosters available for		
Collecting water	38	54.3
Treating water	11	15.7
Cleaning latrines	68	97.1
Emptying and disposing of the sludge	0	0
Schools where duty rosters displayed for		
Collecting water	8	11.4
Treating water	4	5.7
Cleaning drinking and hand washing containers	9	12.9
Cleaning latrines	11	15.7
Schools that have displayed messages for the following:		
Hand washing practices	7	10.0
Latrine use	7	10.0
Latrine cleanliness	6	8.6
Person responsible for cleaning the latrines		
All pupils	58	82.9
Caretakers	1	1.4
Others	11	15.7

6.1.2 Budget for WASH in Schools

Less than half the schools surveyed (38.6%) reported to have budgeted for repairs, maintenance or provision of water supply and sanitation facilities (Table 6-9). In addition, more than 90% of schools reported to have an insufficient budget to meet WASH activities. On average, schools budgeted for two latrine maintenance activities with the most common one being the repair of the superstructure (30%). No school budgeted for pit emptying. The problem of water supply was also quite frequent in the surveyed schools: at least 60% of schools encountered some challenges in the past year. With regards to WASH maintenance, approximately 50% of the schools reported that the parts required for repairs of WASH facilities were unavailable locally for purchase. The study found that lack of funds was a major hindrance to the proper maintenance (repair or improvement) of WASH facilities.

Table 6-9 School budget allocation

Variable	Frequency (N=70)	%
Schools with budget for soap for hand washing for the FY 2013/2014	27	38.6
Schools where amount budgeted for hand washing soap was sufficient	9	12.9
Schools with budget for buying and repairing water supply containers and taps for the 2013-14 school year	16	22.9
Schools where amount budgeted for buying and repairing containers and taps was sufficient	3	4.3
Schools with budget for maintenance of latrines for the period between 2012 and 2014	30	42.9
Schools where amount budgeted for maintenance of latrines was sufficient for the period between 2012 and 2014	4	5.7
Type of latrine maintenance budgeted for in schools		
Repairing slabs	7	10
Repair of superstructure	21	30
Pit emptying	0	0
Repair of vent pipes	6	8.6
Floor tiling	3	4.3
Other	12	17.1
Schools with budget for construction/rehabilitation of latrines for the period between 2012 and 2014	26	37.1
Schools where amount budgeted for construction/ rehabilitation of latrines was sufficient	3	4.3

7. Value for Money Analysis of NSC-Phase I

One of the main objectives of the process evaluation of the National Sanitation Campaign (NSC) was to understand what worked in the implementation of Phase I, in order to provide an account of its Value for Money, i.e. the resources invested with respect to the impacts achieved. The UK Department for International Development defines Value for Money (VfM) as "maximizing the impact of each pound spent to improve poor people's lives" (DFID, 2011), that is using the resources available in the optimal way to achieve sustainable results.

The VfM of the National Sanitation Campaign can be analysed along its results chain expressed in the programme's Theory of Change (TOC). The Programme's TOC, illustrated in Section 3, shows how the financial resources of the NSC are converted into inputs, which in turn generate activities, produce outputs (the specific, direct deliverables of a programme) and result in outcomes (changes in social or economic well-being) and impacts (related to the longer-term, higher level goals of programmes). The VfM of the NSC, therefore, depends critically on the validity of the causality embedded in the 'logic' of the results chain, which in turns depends on the strength of the evidence of the assumptions upon which it is built, along with the degree to which the results chain is subject to risks of external origin. VfM is thus ultimately about the relationship between the financial inputs that enters the chain (the costs) and the resulting outcomes and impact. Figure 7.1 illustrates the Value for Money framework for WASH programmes developed by Prat et al. (2015).

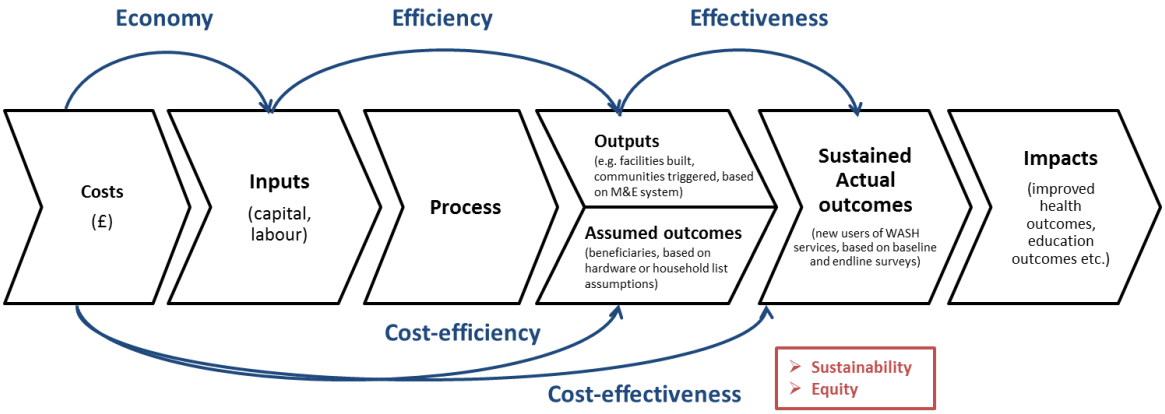


Figure7.1: VFM Framework Source: Prat et al. 2015

The key terms of the VFM are:

- *Economy* relates to the price at which inputs are purchased (consultants in design phase, targeting costs, management information systems, payment mechanisms).
- *Efficiency* relates to how well inputs are converted to the output of interest, which is transfers delivered to beneficiaries.
- *Effectiveness* relates to how well outputs are converted to outcomes and impacts (e.g. reduction of diarrhoeal diseases, improved nutrition, reduction in school drop-

out). Cost-effectiveness analysis measures the cost of achieving intended programme outcomes and impacts, and can compare the costs of alternative ways of producing the same or similar benefits.

-

7.1 The NSC Results Chain - Household Component

To explore the VFM of the NSC, we developed a result chain for the Household and school WASH components of the programme. For the Household component we adapted the result chain form the WSDP Theory of Change illustrated in Section 3. Furthermore, to facilitate the analysis we aligned intermediary outputs with key activities and assumed outcomes with the Key Performance indicators set by the Ministry of Health and Social Welfare.

<table>
<tr><th>Inputs</th><th>Intermediary Outputs</th><th>Assumed Outcomes (KPIs)</th><th>Sustained Outcomes</th><th>Impacts</th></tr>
<tr><td rowspan="2">National, Regional & District
STAFF COSTS
(i.e. PM, M&E, Training, Allowances)</td><td># of villages Triggered to CLTS</td><td rowspan="2"># Sub-villages with ODF declarations</td><td rowspan="6">People use improved latrines built</td><td rowspan="8">Improved health and productivity</td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="2"># of villages re-triggered to CLTS</td><td></td></tr>
<tr><td rowspan="3">National, Regional & District
OTHER COSTS
(i.e. Transport, Equipment)</td><td rowspan="2"># Villages with Sanitation Providers</td></tr>
<tr><td></td><td rowspan="2"># of sanitation providers trained</td></tr>
<tr><td></td><td></td></tr>
<tr><td rowspan="3">Costs for procurement of Behaviour Change Campaign</td><td></td><td rowspan="2"># HHs with improved latrines built</td><td rowspan="4">People use improved hygienic practices</td></tr>
<tr><td rowspan="3"># of villages/people Sensitised to BCC</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Other costs/ materials</td><td># HHS with HWFs</td></tr>
</table>

Figure 7-7-1: Result Chain for NSC Household Component

Expenditure on inputs

This refers to the financial cost of the activities and outputs of the programme, including hardware, software and indirect programmes costs (such as procurement for the behaviour change camping), indicated at national, regional and district level.

Outputs and outcome data

Intermediary Outputs were defined as direct deliverables, largely within control of and accountable to the programme. The outputs indicators concerned: the number of communities triggered/re-triggered to CLTS; the number of communities with access to sanitation service providers and number of villages sensitised through the behaviour change campaign.

Assumed Outcomes for households were measured through the Programme's Key Performance indicators. These included: a) number of sub-villages with ODF declaration, b)

number of villages with Sanitation Providers, c) number of HHs with improved latrines built and d) number of HHS with handwashing points.

Sustained actual outcomes

This indicator illustrates the actual number of people moving from unimproved to improved sanitation facilities and appropriate hygienic practices to allocate attribution of the change to the programme. The program is currently unable to assess attributability, due to the nature of the evaluation methodology adopted.

7.2 The NSC Result Chain: the School WASH component

In analysing the results chain for the School WASH component of the Campaign, we noted that no theory of Change was developed for the SWASH, making it difficult to measure progress achieved along the result chain. Working through the programme assumptions and activities, we developed a result chain for the SWASH component.

<table>
<tr><th>Inputs</th><th>Intermediary Outputs</th><th>Assumed Outcomes (KPIs)</th><th>Sustained Outcomes</th></tr>
<tr><td>National, Regional & District
STAFF COSTS
(i.e PM, M&E, Training, Allowances)</td><td rowspan="2">Number of Schools with functional sanitation HWFs</td><td></td><td rowspan="2">Learners used improved toilets</td></tr>
<tr><td></td><td rowspan="6">Sanitation facilities meet target ratio of pupils to facilities
(1:50 boys and 1:40 girls ratio)</td></tr>
<tr><td>National, Regional & District
OTHER COSTS
(i.e. Transport, Equipment)</td><td></td><td></td></tr>
<tr><td></td><td rowspan="4">Number of Schools with Sanitation Health Clubs</td><td rowspan="4">Learners have improved hygienic behaviour</td></tr>
<tr><td>School infrastructure costs</td></tr>
<tr><td></td></tr>
<tr><td>Other recurrent costs (i.e. material, soap)</td></tr>
</table>

Figure 7-7-2: Result Chain SWASH component

Outputs and outcome data

For school WASH, intermediate outputs included the construction or rehabilitation of sanitation and handwashing facilities (HWFs) and the establishment of sanitation and hygiene clubs. Assumed Outcomes were measured through KPIS, i.e. the ratio of girls and boys to improved sanitation facilities.

7.3 Methods

To calculate the VFM estimates, we prepared a list of input costs and distributed them to the MoHSW and MOEV to provide us with the appropriate information. The input's cost information was to be matched with the intermediary outputs and assumed outcomes monitored. The VFM sheets for the household and SWASH components (see Tables 8-1 and8-2, respectively) were distributed to the MoHSW and MoEVT. However, neither the MoHSW nor the MoEVT provided the information requested for the VFM analysis, reducing drastically the validity of our VFM analysis and financial recommendations for Phase II.

Thus, our Value for Money analysis-based on the steps recommended by Prat et al. 2015-, was conducted using only Quarterly Monitoring Matrixes from January 2013 to December 2014, provided by the MoHSW. These matrixes collect periodic program outputs and generic expenditures for household and school sanitation and hygiene. We collated quarterly budget and expenditures for regions involved in the campaign, however we were unable to identify indirect programme costs, or staff costs, disaggregate school costs for infrastructure and sanitation and hygiene club costs (hardware and software), and how those costs were distributed at national, regional, and local levels. We were also unable to disaggregate the costs of ensuring availability of sanitation supplier from community triggering. In addition, we were unable able to analyse lower level input and output data that supported the achievement of intermediate outputs. Instead, a number of assumptions were made (see comments in the Result Table 7-3).

VFM sheet for Household Component

Table 7-1: VfM sheet for HHS

							INTERMEDIATE OUTPUTS			KEY PERFORMANCE INDICATORS			
Household Sanitation Programme		MoHSW			PMO-RALG	Other stake-holders	# Villages Triggered to CLTS	#Villages Retriggered to CLTS	#Sanitation Providers trained	#Sub-Villages with ODF declarations	# HHS with improved latrines	# Villages with Sanitation Providers	#HHS with HWFs
		NATIONAL	REGIONAL	DISTRICT									
ACTIVITIES COSTS	CLTS triggering												
	Artisan training												
	Sanitation Marketing												
	Hygiene Promotion Campaign												
	Supervision												
	Monitoring and Evaluation												
	Other												
Sub-total													
STAFF COSTS	i.e. salaries												
OTHER COSTS	i.e. travel, transport, equipment												
TOTAL													

VFM sheet for School WASH Component

Table 7-2:VfM sheet for SWASH

					KEY PERFORMANCE INDICATORS		
SWASH COMPONENT		MoEVT			#Schools with 1:50 and 1:40 ratio	#Schools with functional HWFs	# Schools with SHCs
		NATIONAL	REGIONAL	DISTRICT			
ACTIVITIES COSTS	Infrastructure Construction						
	Infrastructure Rehabilitation						
	Infrastructure Maintenance						
	Hygiene Promotion Campaign						
	School Health Clubs						
	Teacher Training						
	Supervision						
	Monitoring and Evaluation						
	SUB-TOTAL						
STAFF COSTS	i.e. Salaries						
OTHER COSTS	i.e. Travel, transport, equipment						
TOTAL							

7.4 Results

The VFM is estimated in Table 7-3 below. It is based on cumulative expenditures and results as of December, 2014. At the time, US$ 11.4 million in funds had been released, with US$ 10.7 million utilized by implementing agencies. US$ 7.2 is estimated to have gone towards household sanitation, and US$ 3.4 towards schools sanitation and hygiene.
The VFM indicators represents the estimated unit cost per result as of December, 2014. These include USD 592 per village successfully triggered and USD 18,000 per school for the construction or rehabilitation of sanitation facilities. The cost of one household gaining access to improved sanitation is estimated at $13. This increases to $17.8 if a HWF is included. This was, at the time of the estimate, above the NSC's original estimate of $10 per household to gain access to an improved sanitation and HWF.

Our methodology proposed the collection of national, regional and district input expenditures for software and hardware for each of the Campaign's planned activities. As discussed in the methods sub-section, the lack of provision of key figures and data by the ministries did not facilitate the calculation of an appropriate analysis. For instance, in the VfM analysis of the result chain for the household component we were unable to disaggregate resources spent for each of the Campaign's activities, i.e. CLTS, sanitation marketing, Monitoring and Evaluation, at district, regional and national levels. This made it difficult to establish the actual unit costs spent by the Ministry for each of the Campaign activities and thus plan for future budget. We suggest that a clear record is kept for the resources allocated to the specific activities, so that transparency is prioritized and the programme's Value of Money can be calculated.

Furthermore, the analysis of the results chain for the household component showed that one of the key activities of the NSC, the behaviour change campaign, was never developed nor delivered. This result, which was confirmed by the analysis of the WSDP Joint Monitoring Programme documents (See Section 5), means that one of the key assumptions of the programme's Theory of Change was not validated. The implications of this are further discussed in the next Session.

Similar results were obtained for the School WASH component. In this case no theory of Change was developed at the outset of the Campaign. For this component we aimed to collect soft and hardware expenditures for the key activities, but this were not provided by the Government.

Table 7-3: VfM estimates

	Component	Full Cost (USD million)	Output/outcome indicator	Result	VFM indicator (USD) full cost per result based on assumption /outputs outcomes	Indicator description	Assumptions/ comments
Cost-efficiency (cost per output)	Household S&H	7.2	# of communities signing declarations to achieve improved sanitation status	11,002	592	Cost per community successfully triggered	Assumes 90% of cost on triggering, 10% on supplier activities.
			# of communities with an the service areas of a sanitation service provider	3,927	184	Cost to ensure one community has access to service provider(s)	
	School S&H	3.4	# of schools with constructed or rehabilitated sanitation facilities	171	18,000	Cost of sanitation facilities construction/ rehabilitation per school	Assumes 90% of costs on infrastructure, 10% on clubs. Total expenditures on schools based on overall % intended allocation of NSC for schools and not on actual expenditures.
			Number school hygiene and sanitation clubs established	474	722	Cost of establishing a school sanitation and hygiene club	
Cost-effectiveness (cost per outcome)	Household S&H	7.2	Number of (a) households and (b) individuals gaining improved sanitation facilities	HHs: 413,855 Individuals: 2.2 million	Households: $13 Individuals: $2.4	Cost per (a) household or (b) individual to gain access to improved sanitation	
			Number of (a) households and (b) individuals gaining handwashing facilities	HHs: 377,221 Individuals: 2.1 million	Households: $4.8 Individuals: $0.9	Cost per (a) household or (b) individual to gain access to handwashing facility	
	School S&H	3.4	Number of schools with sanitation facilities meeting target pupil/latrine ratio	171	18,000	Cost per school to meet target pupil to latrine ratio	All constructed/ rehabilitated school latrines were reported to meet target ratio. Estimates based on those outputs taking account shared costs with school clubs. Outcomes of school clubs not reported so no cost-effectiveness estimate was made for them.

8. Discussion

The discussion of the findings of the process evaluation of Phase I NSC, is organised in two sub-sections to reflect the two main components of the evaluation: the household sanitation and the School WASH. For both components the results will be discussed following the original evaluation frameworks outlined in Section 3.

8.1 Household Sanitation

8.1.1 Action Model

The first parameter of the evaluation framework for the household sanitation component, the Action Model, aimed to assess whether the NSC implementation was executed as it was planned, i.e. whether the expected inputs of the Campaign were implemented according to the Programme's Theory of Change (See Section 3). The analysis of the Campaign's enabling environment (Section 5) allowed a review of the main barriers and functioning mechanisms related to the implementation of Phase I.

From the content analysis of the MoHSW Progress Reports and the Aide Memoires of the Joint Sector Meetings (JSMs), it emerged that the Government of Tanzania demonstrated its potential for managing and delivering a sanitation programme at national scale, particularly in its ability of activating communities and establishing training and monitoring mechanisms. On average, the Rural Water Supply and Sanitation Component, which includes the National Sanitation Campaign, was rated as moderately satisfactory by JSMs. Nonetheless, several hurdles to planning and implementation were identified in Phase I of the NSC and for which new mechanisms to address them should be carefully considered in Phase II.

One of the greatest challenges hampering the implementation of Phase I of the NSC, was the systematic delays in disbursing funds to local and regional governments, as well as a poor budget execution by the local authorities.

The fund flow mechanisms adopted in Phase I of the Campaign - allocation from the Ministry of Finance through the national structure - proved to be inefficient in dealing with delays and bureaucracy which persisted throughout the entire Phase I. The WSDP Aide Memoires indicated that the budget for the NSC implementation in the first financial year (2012/2013) was finally disbursed in May 2013 and at the end of the 2013/2014 financial year; only 17% of the budget was disbursed. The most recent data from the WSDP JSM, indicates that as of October 2015, 81% of the total budget (19.3 million USD) has been disbursed. These results were confirmed by the RHOs and DHOs interviewed, who indicated that delays and bureaucratic hurdles at central level were the reasons for the late execution of the Campaign.

Together with delays in funds disbursements, lack of appropriate resources at Region and District level to manage the budgetary allocations were systematically highlighted in the MoHSW's progress reports. These results were reported in spite of the introduction and uptake

by the Central Government of a MIS system to coordinate monitoring and verification of progress.

The NSC implementation, in fact, was affected by capacity gaps at regional and district levels, particularly in relation to the coordination of activities and the monitoring of outputs and expenditures. For each of the Quarters in Phase I of the Campaign, our analysis showed that at least 50% of the Regions submitted their reports monitoring of outputs and financial expenditures with delays or did not submit them at all. Among the reasons for the delays were: lack of human resources and inappropriate incentives for staff, particularly for ward and village level data collectors. These results confirm findings from a previous study conducted by Jimenez and Mtango (2014) in 3 Regions and 6 Districts implementing the NSC. The study concluded that lack of resources (e.g. transport to gather monitoring data) and financial compensation for data collectors at ward, village and sub-village level generated significant disincentives to conducting the monitoring exercise.

The delays in submission of monitoring reports, although a significant issue, could be rectified with the implementation of appropriate sanctioning mechanisms, the poor quality of such reports should be carefully addressed. Such concern, systematically expressed by MoHSW and WSDP Joint Missions, raises uncertainty on the validity of the output data monitored against the key performance indicators of the Campaign. Furthermore, monitoring data are collected at village level on a paper-based register; and it is not clear what methodologies are used for collection and whether a robust system for verification and quality check was in place.

A final challenge that hindered the effective implementation of the NSC was the reported irregularities and delays in the procurement at central level. The analysis of the WSDP documents reports lack of rigorous criteria applied in selecting the marketing agencies and delays in developing and delivering the messages. As a result, a crucial component of the Campaign- the delivery of the Behaviour Change Messaging-was not addressed in Phase I. Whilst the issue of procurement needs to be addressed for Phase II through the development of a more transparent system for procurement and corrective mechanisms, the implications of not developing a behaviour change component in Phase I of the Campaign need to be further discussed.

This evaluation suggests that the inability to deliver a behavioural change campaign (BCC) in combination with CLTS activities may have affected the effectiveness of the NSC impacts on the uptake of improved sanitation and appropriate hygienic behaviour.

The importance of ensuring latrine coverage in the design of an intervention such as the NSC is fundamental. However, its effects may be significantly reduced if the programme fails to effectively guarantee a sustained use of such systems and to address the critical pathways of faecal-oral transmission. Whilst biological reasoning suggests the importance of investing in building appropriate sanitation in reducing health risks, evidence from recent Randomised Controlled Trials (RCTs) assessing impacts of sanitation and hygiene interventions, including the most recent study on CLTS in rural Mali (Pikering et al., 2015) reports negligible positive health impacts on the target population (Emerson et al., 2004; Patil et al., 2014; Clasen et al., 2014, Briceno et al., 2015). A recent Lancet commentary (Schmidt, 2015) has suggested that health impacts of those sanitation and hygiene interventions might have been underestimated,

due to the programme's inability to achieve significant increase in latrine coverage and maintain sustained use and hygienic behaviour.

Thus, although latrine construction was a fundamental component of Phase I of the NSC, the simple construction/upgrading of latrines may have not guaranteed any of the desired effects, and ultimately health impacts, as the programme did not address the issue of having sustained sanitation hygienic behaviour along the entire transmission route. This means that simply building a latrine in one household may not have any impact on diarrhoeal diseases reduction if it is not combined by Handwashing with Soap (HWWS) at critical times, appropriate food hygiene behaviour and hygienic environmental conditions surrounding the households. Similar conclusions were reached by a rigorous evaluation of the Total Sanitation and Sanitation Marketing and HWWS Campaign implemented in some rural areas of Tanzania (Briceño et al., 2015).

Achieving sustained behaviour change particularly in large scale programmes is complex task, nonetheless, novel approaches to behaviour change have demonstrated the potential to achieve sustained change in habits and compliance to the desired behaviour.

A recent HWWS campaign trialled rural villages of Andra Pradesh (India), called SuperAmma, demonstrated that emotional drivers - affiliation, nurture and disgust-rather than beliefs of health benefits can ignite the desire changes in the target population behaviour. A trial of the SuperAmma Campaign showed successful results, reporting a rise in HWWS up to 37% in the intervention area, which was six times higher than in control villages. More importantly, the proportion of people washing hands with soap was still over 30% after one year (Biran et al., 2014).

Thus, to maximise the effectiveness as well as a sustained outcomes change of a national programme such as the Sanitation Campaign, it is critical to prioritise the planning and development of a communication intervention which addresses all transmission routes, which is rigorously tested and carefully implemented at grassroots level.

8.1.2 Change Model

The second component of the evaluation framework is the Change Model, which guided the assessment of whether the Campaign's inputs resulted in the expected changes in behaviours and outputs. As indicated in the study protocol, the study design did not allow to determine attribution of changes in behaviour and outputs to the NSC. Nonetheless, we can provide a representative overview of the prevalent sanitation and hygiene conditions and behaviours in the intervention areas, to develop assumptions that can be tested prior the design of the Phase II of the Campaign.

The evaluation reported low prevalence of improved sanitation and hygienic conditions, with an improved sanitation coverage of 24.8%. These estimates varied significantly from District to District, varying from 4% to 89% coverage. As expected the majority of toilets observed were traditional pit latrines (57.3%). Furthermore, 17.7% of the households surveyed were found to have no sanitation facilities at all. Whilst it cannot be stated with certainty, there is high likelihood that members of these households practiced open defecation. These data are

results of direct observations by trained enumerators of the facilities in the surveyed households and not reported presence of toilets by respondents.

The observed conditions of the latrines surveyed were in general very poor. Whilst more than half of the latrines were observed to be clean (58.8%), other indicators suggest that poor hygienic conditions were still prevalent, confirming the importance of addressing all aspects of the transmission route. Approximately half of the latrines observed (47.9%) were reported to smell, to have flies (52.1%) or to have visible faeces outside the cubicle (24%). The majority of latrines (67.7%) had no door, whilst 49.3% were observed to have a functional superstructure.

The presence of functional Handwashing facilities (HWFs) was observed in only 8.64% of households where the NSC was implemented. Furthermore, observation of presence of handwashing material, such as soap, revealed a more alarming result: only 3.74% of the household survey were observed to have water and soap present in the HWF.

A recent RCT conducted on the HHWS campaign implemented by the World Bank's Water Sector Programme (WSP) evaluating the health effect of the Total Sanitation and Sanitation Marketing (TSSM) and HWWS Campaign reported a low coverage of HWFs, with the control areas having 1.2% coverage, which increased by 1.7% in the HWWS intervention areas, and by 2.8% in the HWWS and TSSM combined intervention group. Similarly, findings from the baseline survey conducted by the MoHSW in 2013 in 39 LGAs within 14 rural regions of Mainland Tanzania (MoHSW, 2013) only 6.2% of households with HWFs. Although these studies' findings are not comparable, due to differentials in design and methods, they suggest that low coverage of HWWS still needs to be adequately addressed in rural Tanzania.

Whilst coverage estimates still report a grim scenario for rural areas of mainland Tanzania, other aspects investigated in this survey can provide good insights on things that can be addressed guidance for Phase II of the Campaign.

Exposure to the NSC Campaign and other communication channels

The exposure of the target population to the campaign was reported by 61% of the surveyed respondents. Among these, the main sources of information for the campaign were community health workers (44.7% of respondents), radio (37.1% of respondents) and community events (31.8% of respondents). These findings confirm recent review of the District capacities conducted by Jimenez and Mtango (2014) on that Tanzania's local government structure has the potential to deliver a sanitation and hygiene promotional program at a national scale, provided that the appropriate financial incentives and resources are allocated.
The modest frequency of message exposure, may be explained by several factors, such as the reduced effect of exposure due to lack of delivery of the BCC component, the frequency and intensity of and the loss of fidelity of message exposure.

As expected, the survey revealed that general exposure to media messaging is quite low with more than 80% of respondents reporting to never read a newspaper or watch television. Conversely, exposure to radio is fair with 40% of respondents reporting to listen to the radio every day. Social and community events (such as neighbourhood meetings, farmers' events) may be important channels through which behavioural change messages should be

positioned. As a matter of fact, participation into the social life of the villages is fair with attendance reported by at least 40% of respondents. These findings provide a baseline on the available channels through which delivering the BCC campaign.

Motivation

Findings from the analysis of motivational determinants suggest that there is high awareness of the health benefits linked to having an improved, with more than 80% showing understanding of the link between poor sanitation and diseases. However, caution must be paid to attributing these results to the NSC implementation, due to potential spill-over effects from other interventions, such as the successful *Mtu ni Afya* Campaign or the more recent TSSM. Other motivational determinants in the surveyed population were privacy and financial savings.

These results- confirmed by other cross-sectional studies conducted in Tanzania (Briceño and Yusuf, 2012; Malebo et al., 2012)- suggest that the level of awareness of health benefits linked to appropriate sanitation is high in rural Tanzania is high, however this may not be sufficient to generate the desired changes in population's practices. Rigorous research has demonstrated that health education to develop awareness of diseases linked to poor sanitation and hygiene can be ineffective in achieving the desired change towards hygienic behaviours (Biran et al., 2009; Curtis et al., 2003; Jenkins and Curtis, 2005).

Interestingly, strong social norms about sanitation and open defecation were reported: more than 90% of respondents agreed that open defecation is an unacceptable practice within the community for both children and adults. Furthermore, having a clean and improved toilet is considered important aspect by 97% of respondents, in particular in respect to status visitors and neighbours. A study of Jenkins and Curtis (2005) on the motives linked to sanitation demand generation in rural Benin showed that positive drivers, such as prestige, or good social relations are likely to appeal household's demand for sanitation.
Thus, it is suggested that findings on social norms related to sanitation and open defecation are further explored as potential drivers upon which build a communication and behaviour change campaign in Phase II.

Ability and Opportunity

These questions were aimed to further verify the impacts of the Campaign inputs (i.e. CLTS, Mason presence) at village level on barriers or enabling conditions to build new facilities.
Latrine construction in the surveyed areas is split between self-construction by households or use of local builders. Among the household survey only 16% reported to have made any improvement to their latrines, and of these only 10% reported to have built a new toilet in the past year; whilst the improvement made by half respondents was conducting repairs to the superstructures. The reported intentions to build a new latrine or upgrading the existing one was moderately low (32%), although the majority of these households reported to have begun saving money for the sanitation improvement. Among these the most desired improvement planned is the construction or repair of the superstructure (>50%).

The main source of information for latrine construction was neighbours (53%), suggesting the importance of further exploring community dynamics in Phase II of the Campaign and their ability to share information within the neighbourhood. Masons played a marginal role, as only

32% of the respondents reported to use them as source of information for latrine construction. Although these data could not be triangulated with those from the village/community survey, reporting on the number of artisans trained during the Campaign, due to invalidation of the dataset, the impact of the artisan/mason role remains unclear. This may be due inability to discern the selection criteria for artisans within the villages, whether the current number of masons was reportedly trained during the NSC or whether they were trained by other WASH interventions. Furthermore, to our understanding, there is no monitoring system in place to assess the artisans' performance, the activities they undertake and to identify potential constraints they may face in carrying out their tasks.

8.2 School WASH

8.2.1 Action Model

Similar results were identified for the institutional and enabling environment of the SWASH component of the NSC. During Phase I of the NSC, the MoEVT, was mostly involved in training and knowledge management activities (58%), followed by monitoring and supervision missions (37%). Despite the involvement of the central government in conducting training and assessing progress the SWASH component of the NSC was characterised by several challenges that need to be addressed for the future Phase.

As expected, fund transfer delays affected the implementation of the SWASH component at the same level it did the sanitation household one. In particular, the analysis of the Aide Memoires of the Joint Supervision Mission reported that throughout the first year of the NSC implementation, funds SWASH activities were channelled directly to MoEVT, reportedly in violation of AfDB financial agreement. Whilst producing delays in the Campaign flow, this issues highlight coordination challenges among the NSC actors at central level.

Other coordination challenges have impacted the management of the Campaign at School level, in particular between region and districts and district and engineers and artisans conducting rehabilitation and construction of latrines in the schools.

As in the case of the household component, poor quality and late reporting of progress and expenditure significantly impacted on the effectiveness of the School programme. Insufficient funds at local level were reported as one the main challenges in conducting appropriate monitoring activities.

Lack of human resource capacities at local level was also cited as a hurdle to conduct appropriate monitoring of programme outcomes. Quarterly Progress document reported that LGAs were not aware of funds being allocated in their accounts, or it was difficult to discern among those activities conducted under the NSC umbrella and those implemented by other partners. However, another critical hurdle to effective monitoring of the NSC was the delayed development and dissemination of the SWASH guidelines, a comprehensive document produced at central level that was set to guide local and regional governments in implementing and assessing the SWASH activities. A recent study conducted by Jimenez and Mtango (2014) reported that, at the time the survey was conducted, the Districts interviewed were not aware or not using those guidelines.

8.2.2 Change Model

The evaluation of 70 schools which received implementation of the NSC found that half the school surveyed satisfied the MoHSW guidelines standard for student to male toilet compartment ratio of 1:50 boys, whilst only 43% of schools satisfied the ratio 1:40 girls. If we consider the WHO/UNICEF (2011) guidelines standard for student to toilet compartment ratio, only 20% of the schools satisfied the ratio of 1:25 girls.

To meet the MoHSW standard, the construction of additional latrines (90 for girls and 3 for boys) would be required, paying particular attention to latrines for female learners. Meeting the required toilet per learners ratio is necessary, as evidence indicates that students are likely not to use the toilets when there is a queue, particularly during the planned breaks (Upadhyay et al., 2008).

Furthermore, almost 90% of the schools were characterised by only one toilet block. Although respondents reported that toilet separate facilities were present for boys and girls, these were not exclusively detached, and could therefore not be considered as gender specific. The lack of user friendly facilities for girls, children and disabled learners often make these vulnerable groups feel isolated in the schools. This could have a significant impact on enrolment, absenteeism, and lack of pupils' safety (WaterAid, 2009; WHO/UNICEF, 2011). As indicated by results of an RCT conducted in Kenya (Freeman et al., 2012), the presence of an appropriate WASH environment (hygiene promotion, water treatment and sanitation access) has increased school attendance of female learners by almost 60%.

Together with availability, latrine functionality has an impact on use in ensuring an appropriate hygienic environment (UNICEF, 2015). Due to a lack of data, however, this study was unable to assess this parameter, which should be considered in future monitoring reports.

Although there are national variations on the definition of clean toilets, the UNICEF SWASH monitoring package (UNICEF, 2015) identifies three key indicators to measure cleanliness – lack of smell, no visible faeces in or around the facility and no flies. Results from our survey shows that although over 90% of the toilets were improved latrines, and more than half of schools reportedly have clean toilets, however most latrines were unable to satisfy all UNICEF criteria. For example, over 90% of the toilets observed were found to be smelly which could be due to the fact that the toilets were full or had some visible faeces either from overflowing pits or from improper disposal of anal cleansing materials.

Another indicator ensuring hygienic separation of faeces from human contact is handwashing with soap (HWWS) at critical times, such as after defecation and before handling food. Although more than half of schools featured handwashing stations, only 39% reported availability of soap for HW. These results were confirmed by teachers reporting that the budget for soap was allocated by only 39% of schools in the reported financial year. Although this proportion is higher than the Tanzania's Ministry of Health and Social Welfare's (2011) goal of at least 15% of schools having HWFs with soap, this proportion is still low considering the effectiveness of HWWS in reducing diseases such as diarrhoea.

Together with soap availability, the provision of cleansing material for learners is a fundamental hygienic practice, which was reported in only 37% of the schools visited. Furthermore, the presence of regular messages displayed, instructions and monitoring are needed to promote hygiene practices among students, and to reduce illness-related absenteeism and other diseases such as influenza (Lau et al., 2012, Talaat et al., 2011).

Adequate water supply in schools, particularly for drinking and for HWWS, also plays a major role in improving the health and education of students. The study found that more than half the schools surveyed reported to have drinking water available for students at the time of the visit. However, only about half of the schools reported constant water supply throughout the year, which is in line with a recent cross-sectional survey of WASH school conditions in rural areas of Tanzania (Brombacher et al., 2014).

Planning and budgeting for school WASH

In line with findings reported from the literature, the budget for SWASH, managed by the School Committee is mostly dedicated to hardware interventions, such as the rehabilitation and construction of sanitation and hygiene facilities (John et al., 2009; Jimenez and Mtango, 2013; Deroo et al., 2015). Our study reported that lack of funds and insufficient parts for repairs and maintenance, as well as budget for recurrent costs, were one of the main challenges experienced in maintaining an appropriate environment in schools. Whilst we discussed the importance of handwashing with soap, lack of or poor maintenance of latrines and water supply sources, may lead to contamination of soil, groundwater or even lead to wastewater flow, exposing learners to faecal pathogens. Thus, whilst budget for SWASH infrastructure is the starting point for creating a hygienic environment in schools, funds for post-implementation monitoring and maintenance are equally fundamental to sustain this environment (Deroo et al., 2015).

Hygiene promotion and behaviour change

Another fundamental pillar of the UNICEF child-friendly schools model (UNICEF, 2015) is that schools deliver children the appropriate hygiene messages so that they can become agents of change not only in their schools and also in their communities (Deroo et al., 2015). Whilst teachers were reported to teach hygiene messages and to ensure that students partook in WASH activities, it was unclear whether teachers had received adequate training on hygiene promotion, and whether the schools had a behaviour change campaign in place. From the analysis of the MoEVT activities it appears the SWASH guidelines for implementing the appropriate WASH behaviour in schools was finalised with significant delays at the end of 2014, suggesting that part of the school which received the NSC had not received the appropriate training.

The importance of appropriate training is further confirmed by a recent study's finding showing that students with adequate knowledge in hygiene and sanitation practices are at a lower risk of parasitic infections and diarrhoea diseases in schools (Gottfried, 2010).

The participation of the SMC and PTA in WASH activities was reported in the majority of the schools surveyed (>80%). The involvement of students and teachers engaging with the community can act as agent of change towards appropriate hygiene behaviours in the wider context. For example, UNICEF in partnership with the government of Nepal launched the

School Led Total Sanitation (SLTS) project and reported a 100% achievement of household toilets in all 314 homes by the residents of Baijalpur through a school led community project initiative (Mooijman, 2012).

9. Recommendations

This evaluation generated valuable insights to be considered in addressing the implementation challenges of Phase I and guiding the planning and strategic development of Phase II of the Campaign.

9.1 The Enabling Environment

- Ensure appropriate planning and budgeting for Phase II activities based on a sound Theory of Change developed for each component of the programme.
- Develop a sound accounting system-at district, regional and national level- for each of the Campaign activities, based on the VFM sheets developed in Section 7.
- Develop an appropriate financial management system that ensures the flow of funds and corrective mechanisms in case of disbursement delays for Phase II of the NSC.
- Plans for transparent procurement procedures should be made to design, develop and test the selected approaches to be implemented in Phase II of the Campaign.
- Improve coordination among stakeholders involved in the NSC Campaign, through the establishment of a NSC coordinating unit, clear TORs for roles and responsibilities and corrective mechanisms for non-compliance.
- Establish rigorous and independent monitoring mechanisms to report outputs at village level, which take into account challenges of incentives and resources for ward and village level data collectors.
- Ensure sufficient and skilled human resources are allocated exclusively to the implementation and monitoring of the NSC activities.
- Any change of plan or lack of plan fulfilment should be made available for consultation among key stakeholders and held accountable.
- Develop clear guidelines establishing roles and responsibilities in the School management, use of WASH budget within schools and contributions from other sources.
- Provide a rigorous mechanism to assess school and intuitional WASH compliance and establish a standardized reporting mechanism.

9.2 Household Sanitation and Hygiene

- Design and plan Phase II of the Campaign on the basis of the lessons learnt from the evaluation of Phase I, exploring and testing assumptions that emerged from the study.
- Develop a rigorous methodology for a representative baseline which can be confidently used for comparing progress of Phase II.
- Design, test and implement a sound Behavior Change Campaign, which addresses the entire transmission route, and can be delivered through the existing LGAs and activities established in Phase I.
- Plan and implement independent evaluations of intermediate outcomes of Phase II building on the existing experience to generate lessons to improve program delivery and inform future phases.

9.3 School WASH

- Conduct a nationally representative baseline of SWASH conditions, policies and barriers to use as terms of reference for assessing progress and impacts of Phase II activities.
- Consider the impact of increasing financial efforts to improve the enabling environment within schools, particularly increasing the ratio of latrines per male and female learners and access to disabled pupils.
- Provide a thorough mechanism to assess school and institutional WASH compliance and establish a standardized monitoring mechanism with key indicators and milestones used by stakeholders for reporting school WASH activities.

10. Final Considerations

The process evaluation of the National Sanitation Campaign provided a comprehensive and representative overview of the prevalent WASH conditions and behavioural determinants in the target population during Phase I implementation. Furthermore, through the analysis of key programmatic documents, this evaluation has highlighted the main barriers which affected Phase I, and provided a clear baseline for defining improvements for the next Phase.
Although the results gathered generated important hypotheses to be tested in Phase II of the Campaign and suggested recommendations for improvement, the findings cannot be exclusively attributed to the NSC activities. As indicated in the research protocol, this study followed an “adequacy evaluation” design, which aims to compare programme outcomes to an existing standard or numeric target, but does not rigorously assess whether the outcomes are attributable to the intervention.

Nonetheless, and in spite of the limitations encountered in the execution of this research, this process evaluation revealed to be an extremely useful exercise for several reasons:

- It engaged the NSC implementers at central level (i.e. MoHSW and MoEVT) in critically assessing the intermediate outcomes of Phase I, through their direct participation in data collection and interpretation, enabling in depth understanding of the key issues at grassroots level.
- It provided a multi-stakeholder perspective of Phase I of the Campaign. Through interviews with the central government, District and Region officials, diverse perceptions of the barriers and facilitating aspects of the campaign were reported.
- Finally, the process evaluation established the first step for creating a system for on-going evaluation of the programme, allowing the independent measurement of changes over time and testing and documenting the effectiveness of the planned adjustments emerged from the study.

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Annex I: Water Sector Development Program Structure

Components	Sub-components
Component 1: Strengthening of Water Resources Management and Development Framework	i) Basin level water resources management, ii) Integrated river and lake basin management and development plan, iii) Priority water resources infrastructure investment.
Component 2: Scaling up Rural WSS Service Delivery	i) Rural WS investments ii) National Sanitation Campaign iii) Management support.
Component 3: Scaling up of Commercial / Urban WSS Service Delivery to meet MDGs	i) Management support for utilities; ii) Urban WSS investments
Component 4: Supporting Sector Institutional Strengthening and Capacity Building Implementation Status	i) Operationalizing the role of the Ministry, ii) Technical assistance for strengthening sub-sector planning and operational capacities, iii) Support to sector coordination and performance monitoring, iv) Sector capacity building.

Annex II: Concept Note:
Tanzania Water Sector Development Program
Rural Sanitation and Hygiene Program

1. Purpose

The purpose of this note is lay out the framework for implementation of a rural sanitation and hygiene program in order to improve household sanitation facilities and school and household hand washing facilities.

2. Background: National Goals, Institutions, and Operations

Tanzania has adopted the Millennium Development Goals' sanitation target of halving the number of people without improved sanitation by 2015. Additionally, under their Vision 2025, Tanzania has pledged to provide improved sanitation to 95% of the population by 2025. This is a continuation of Tanzania's short-term sanitation target outlined in the draft MKUKUTA II (Tanzania's national poverty Reduction Strategy) as outlined in the table below.

Table II-1: MKUKUTA II Sanitation and Hygiene Targets

Goal 4: Increasing access to affordable clean and safe water, Sanitation and Hygiene

Operational Target	Cluster strategies	Intervention Packages	Key Actors
A) Access to improved toilet and functional hand washing facilities at household and public places particularly schools, health facilities, transport facilities (improved toilets at household level increased from 23 percent rural and 27 percent urban (in 2010) to 35 percent rural and 45 percent urban) in 2015 **B)** Proportion of population with access to improved sanitation facilities **C)** Proportion of schools with access to improved sanitation facilities **D)** Proportion of households connected to the public sewerage system increased to 22 percent	Strengthen implementation of Water, Sanitation and Hygiene interventions	Finalization of Sanitation and Hygiene Policy	MoWII, MoHSW, MoEVT PMO-RALG, CSOs, LGA, FBOs, Private sectors, communities
		Participatory plan for Sanitation and Hygiene Promotion and marketing Guidelines and Training manuals	MLHHS, MoHSW, PMO-RALG, CBOs, NGOs, Private Sectors, Mass media
		Total Sanitation and Sanitation marketing (TSSM) approach Support for monitoring of resource, outcomes and outputs	MoWI, MoEVT MoHSW, PMO-RALG
	Strengthen implementation of WASH Program	Diagnosis of cholera at Village and District levels Training on health standards	MLHHS, MoHSW, PMO-RALG, CBOs NGOs, Private sectors, Mass media, Community
	Strengthen Implementation of WASH program	Legal instruments and bye laws with enforcement mechanisms to curb water pollution by all.	
		Develop regulations for implementing Water Supply and Sanitation Act 2009 Utility responsibility for onsite sanitation, sewerage, waste water disposal and private sector development sanitation, sewerage and waste water disposal services.	MLHHS, MoHSW, PMO-RALG, CBOs NGOs, Private sectors, Mass media, Community
	Ensure that schools and health facilities	Rehabilitation and construction of ore public sanitation facilities, disability-friendly	MoHSW, MoEVT, PMO-RALG

	have adequate WASH provisions	Sensitization, construction of sanitation facilities at household level, advocacy.	
Solid Waste collected in urban centres increased from 47 percent to 85 percent	Strengthen solid waste management in urban areas	Guidelines for environmental sound management of wastes, law enforcement and construction and management of sanitary landfills.	PMO-RALG, VPO, MoWII, MoHSW
Storm water management in urban centres strengthened	Strengthen drainage and storm water management in urban areas	Construction and rehabilitation of drainage infrastructure	PMO-RALG, VPO, MoWII, MoHSW

Overall responsibility for protecting public health through ensuring the provision of adequate sanitation and hygiene promotion falls under the Ministry of Health and Social Welfare (MoHSW). Other national agencies with mandated responsibilities include the Ministry of Water and Irrigation (MoWII), Ministry of Education and Vocational Training (MoEVT) and the Prime Minister's Office for Local Government (PMO-RALG).

Although there has not been a clear delineation of sanitation and hygiene roles and responsibilities, an MoU has been developed by the four agencies which begin to outline a coordinated dialogue structure with a plan of action to harmonize roles and responsibilities. In addition, the MoHSW is leading the development of a national hygiene and sanitation policy with the objective of improving sanitation and hygiene practices, and detailing harmonized definitions and monitoring. The MoHSW has also developed a National Environmental Health, Hygiene and Sanitation Strategy (2008-2017) which outlines options to improve sanitation that include a number of promotional, educational, and participatory approaches and methods

In terms of large scale operations, the Water Sector Development Programme (WSDP) comprises 4 components - rural and urban water supply and sanitation (WSS), water resource management and institutional development and capacity building. This concept note addresses approaches to sanitation and hygiene under the rural water supply and sanitation component.

3. Area of Focus: Moving to improved latrines and beyond.

In rural Tanzania, basic latrine coverage is high with about 80-90% of households having some type of sanitation facility[6]. This high coverage is largely believed to be due to the *Mtu ni Afya* (Man is Health) campaign which promoted latrine building starting in 1973 through radio, listener groups, and other channels. The campaign prompted behaviour change though empowerment and peer pressure, rather than germ education theory or use of hardware subsidies.[7]

Despite the widespread use of sanitation facilities, the 2005 DHS reports a relatively high diarrheal prevalence at 12.6% for under-5 year old (<5) children, children under 2 years suffering the most (as a comparison, <5 malarial prevalence is 16.5%[8], and HIV is 0.6%[9]). This indicates that people are living in a faecally-contaminated environment. The state of many latrines in rural areas is low and many are not of sufficient quality to realize the health and economic benefits of sanitation. In addition because of low quality and dangerous conditions, some people, especially children may be practicing open defection. The percentage of the rural population with access to improved sanitation

[6] DHS 2007
[7] *Mtu Ni Afya,Tanzania's Health Campaign.* Agency for International Development. 1978
[8] *State of the World's Children*. Unicef. 2003
[9] UNAIDS. 2005

by JMP definitions is 21. [10] Access to permanent latrines is 47% according to MoHSW. Definitions vary between permanent and improved latrines and will be harmonized in the new policy.

The challenge for the majority of rural households in Tanzania is to move from unimproved to improved sanitation. Figure 1 illustrates these needs on a simplified sanitation ladder, which is used by sanitation practitioners to map coverage and options in terms of quality and costs.

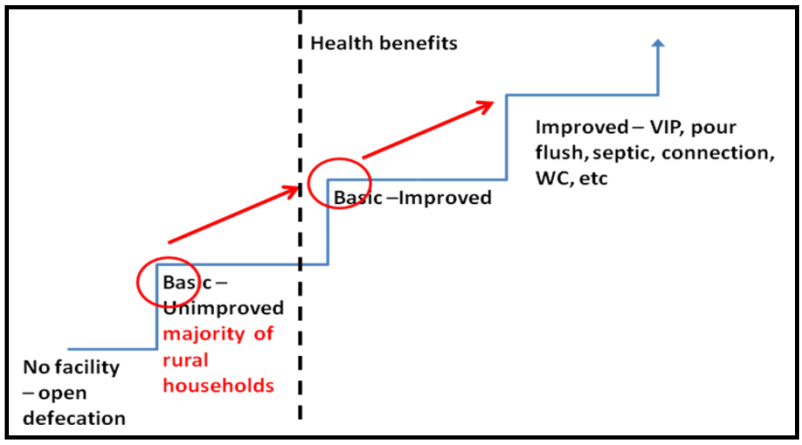

Figure 1: Simplified Sanitation Ladder

Approach: A New National Campaign

A new sanitation program will make use of the progress made under the *Mtu ni Afya* campaign and use the subsequent awareness raising efforts and networks established by PHAST and other approaches. These provide a solid foundation, which in combination with a state-of-art behaviour change campaign and of recent sanitation promotion experiences in Tanzania can raise the priority of sanitation and prompt households to invest in improving their facilities, and improve hygiene behaviour in communities and schools. The majority of household investments would involve retrofitting existing latrines and installing hand washing stations, such as tippy taps. In communities this approach focuses on subsidizing promotion rather than hardware so that households make the decision to purchase and therefore use improved sanitation and hand washing facilities. In schools the approach involves hygiene promotion alongside improvement of infrastructure.

The program will develop pre-tested messaging and concepts based on audience research, and stimulate demand and improve supply through a combination of Community Led Total Sanitation (CLTS) and Sanitation Marketing. The program will be delivered by training facilitators to trigger CLTS, training *fundis* masons to improve latrines and sell upgrades, engaging professional agencies to coordinate messaging, carrying experiential marketing events, airing supportive radio programming, developing training and promotion materials, improving school sanitation infrastructure, and establishing targets and a rigorous monitoring system to allow progress tracking and adjustments. Components will be structured with sustainably in mind. In particular, those activities with major post-campaign requirements, such as monitoring, will be developed in close collaboration with local authorities.

[10] UNICEF-WHO JMP 2008

Messaging and Concepts: Clear and consistent **messages and concepts** are needed to motivate behaviour change[11]. This would imply carrying out new or making use of existing consumer research and concepts and messages that have been developed and pre-tested in Tanzania. The MoHSW would engage a professional agency to coordinate their delivery though Local Government Authorities, a number of components as described below plus existing structures of national Training of Trainers, initiatives, partnerships, and networks.

Messaging and concepts will be tailored to the specific gender and age groups who control the actions needed to achieve program objectives. Program components would be built around target groups and between household and school settings. For household sanitation, the primary audience is heads of household who make investment decisions. For handwashing and hygiene behaviour, the primary audience is mothers and caretakers of children under five years old who control household hygiene decisions. For schools, the primary audience is children ages 6-14 who can be enthusiastic adopters of new behaviours and can have some influence on behaviours in the home.

Engagement of Households and Communities - CLTS triggering and follow-up: CLTS seeks to stimulate demand for sanitation and allows a community to determine whether or not to improve their situation and when. Originally developed in South Asia to reduce open defecation, the approach highlights the danger of bad sanitation practices. In Tanzania where poor quality latrines are the main sanitation challenge, CLTS defines these facilities as places of fixed point open defecation to prompt demand for their improvement.

Engagement of Masons and Suppliers – training in construction, household sales, and developing access to finance: The program would train existing village fundis in upgrading latrines, hand washing facilities, as well as in sales and business development skills. Trained fundis would be present at CLTS triggerings and would be able to commence taking sales orders once a community action plan is enacted. In addition the program would build on existing innovations in financing fundi businesses.

Engagement of Schools – Improvement of Sanitation Infrastructure, installment of hand washing facilities, and Hygiene Promotion: Children would be engaged in setting up and maintaining school handwashing facilities and in constructing tippy taps for home as well as promoting hand washing with soap at key times. In addition, the program would improve school sanitation facilities in target communities based on ongoing school water, sanitation, and hygiene (WASH) mapping exercises and national guidelines currently under development.

Experiential Events – recognition and reinforcement: To further motivate audiences, professionally developed experiential marketing events would be held in program areas. These provide a mix of entertainment and education and provide a platform to promote full community coverage of sanitation, proper latrine use and maintenance, sales pitches for masons, testimonials from households on benefits, and recognition of well performing communities, schools, and individuals.

Radio – national reach through a trusted source: Widely listened to and respected as a credible source of information in rural areas, radio programming would deliver the sanitation and hygiene messages through dramas/soap operas, short spots, testimonials from national figures, and DJ

[11] Andreasen: *Marketing Social Change: changing behaviour to promote health.,* Jossey-Bass: 2005, Kotler and Lee: *Social marketing and influencing behaviour for good,* Sage Publications: 2008

mentions. The impact of radio broadcasting could be strengthened by the formation of local listener groups, which would enable communities to discuss, interpret and act on the messages.

Development of training and promotional materials: To assist in capacity building and delivery of messages to the target audiences, training and promotional materials would be developed based on existing national experiences. Training materials would include CLTS, mason training, and school promotion. Promotional materials would include deliver message appropriate to target audiences and campaign stakeholders such as notebooks for local government, uniforms for fundis, t-shirts for CLTS committees, calendars for households, etc.

Ensuring learning and innovation: The campaign will document lessons and experiences and promote adjustment and local innovation, based on needs on the ground. This could for example involve trying various approaches to strengthening mason training, business development, and access to finance.

4. Institutional Arrangements

National level Government Coordination

MoHSW

With the overall mandate for overseeing sanitation and hygiene improvements, the Directorate of Preventative Health Services within MoHSW, would coordinate the national campaign. This would include transferring resources to LGAs, national supervision and monitoring, contracting professional research and marketing agencies. The Ministry would need to assess its capacity needs at central and local levels in terms of skilled manpower requirements. The WSDP will need to be restricted to reflect the MoHSW's lead implementation and associated accountabilities.

Local Government

Much of the campaign funding would be transferred to LGAs supportive budgets of approximately USD 20,000 for supervision, monitoring, CLTS triggering, and hand washing promotion. These budgets will be performance based and subject to increases for well performing LGAs.

Other Stakeholders

Several other stakeholders would be involved in the hygiene and sanitation campaign. These would include development partners providing funding, technical and monitoring assistance, NGOs and CBOs to deliver activities through their existing programs, and the private sector as local service providers, contractors for marketing services, and providers of in kind contributions in materials and expertise. Figure 2 outlines major responsibility areas. As part of program preparation, stakeholder mapping could help to allow stakeholders determine participation based on their interests and availability.

Table II-2: Broad Responsibility Areas

Organization	Responsibility
National Lead Agency (MoHSW)	Engage Project Management Team and contracted agencies Production and distribution of training materials Budget transfers to LGAs Monitoring and Evaluation
MoEVT	Coordinate School Infrastructure upgrading and promotion
PMO-RALG	LGA budget expenditure supervision
Local Governments	CLTS training and triggering Mason training School hygiene promotion Monitoring and supervision
NGOs	Channel promotional materials and activities, monitoring
Development Partners	Financing, technical assistance, coordination assistance
Marketing Agencies	Messages and Concepts Experiential events Media production and placement Promotion materials Pre-testing Mason sales support
MoWI	Water in project villages

5. Monitoring and Evaluation

In order to track progress and provide clear quantifiable objectives, a monitoring framework would be developed for use by program management and implementers, and embedded in LGA monitoring systems. Figure 2 below illustrates a sample results framework which could capture targets and progress. This would imply setting ward and district level targets which would be aggregated and tracked nationally. Targets will also be used as a basis for establishing a reporting and verifications systems, LGA budgeting, and a recognition system.

Table II-3: Illustrative Results Framework Format

Indicator	Targets					Definition and remarks
	Y1	Y2	Y3	Y4	Total	
OUTCOMES						
1. Household Sanitation	100,000	300,000	500,000	400,000	**1,300,000**	This indicator is measured as the number of improved latrines being retrofitted, constructed under the program as a result of program promotion **Guidance on improved latrines**. *Improved latrines* are defined as toilets linked to septic tanks or pit latrines, VIP latrine, **pit latrine with slab**, composting toilet) that have been constructed under the project. It is expected that the baseline for this indicator (as it measures what is achieved under the project) will be zero at the start of the program. This is not to negate progress already being made, but simply allows attribution of outcomes to funding spent on the program. The figure of zero can be amended based on national survey data.
2.School Sanitation	88	175	263	174	**700**	

Table II-4. Process Indicators

Result Indicator	Baseline	Target values		Frequency	Method	By
Number of villages with signed declarations and deadlines to improve household Sanitation and hygiene	-	-	600	Quarterly	Review of official records, field visits, MIS system	LGA,s/RS, MoHSW, MoEVT, PMO-RALG
Number of villages in the service area of a local sanitation service provider	-	-	600	Quarterly	Review of official records, field visits, MIS system	LGA,s/RS, MoHSW, MoEVT, PMO-RALG

The basis of the monitoring system would be establishing village and school registers by communities at the time of CLTS triggering. The registers track the progress of each household and school in improving their sanitation and hand washing facilities and monthly totals of improved sanitation and hand washing facilities are reported to wards and districts. Registers have already been established in several villages. The program will link monitoring and reporting to recognition and rewards.

6. Cost Estimates

Table 5 shows estimated program costs based on known unit costs at the local and national levels. It is estimated that 1,300,000 household latrines will be improved during the campaign time, costing

USD 13 million and total of 701 schools with improved toilet and handwashing facilities costing USD 7 million will be reached.

Table II-5. MoHSW led Sanitation and Hygiene Activities – Estimated Targets and Disbursements

Activity	2010 - 2011	2011 - 2012	2012- 2013	2013-2014	2014-2015
Cost per household targeted	0	10	10	10	10
Number of Households targeted	0	100,000	300,000	500,000	400,000
Sub Total (USD)	**0**	**1,000,000**	**3,000,000**	**5,000,000**	**4,000,000**
Cost per School WASH targeted	0	10,000	10,000	10,000	10,000
Number of school targeted	0	88	175	263	174
Sub Total (USD)	**0**	**880,000**	**1,750,000**	**2,630,000**	**1,740,000**
Grand Total (USD)		**1,880,000**	**4,750,000**	**7,630,000**	**5,740,000**

In the first year of implementation (2011/12), some 100,000 households are targeted to achieve improved sanitation and 88 schools are targeted to have a ratio of 40 girls and 50 boys per drop hole. To calculate targets based on the available budget, a unit cost of USD 10 per household was used, which reflect the total cost of activities under the national sanitation campaign divided by the number of household target for behaviour change and is based on experiences from MoHSW and the total sanitation and sanitation marketing (TSSM) project in 10 pilot districts. For the school WASH a cost of USD 400 per drop hole was used based on findings by MoHSW, MoEVT, UNICEF and SNV. USD 100 was added for supervision and monitoring, bringing the drop hole cost to USD 500. Each school is assumed to have 20 drop holes.

Annex III: Methods: Sampling, Data Collection and Analysis

Household Survey

A cross-section survey was designed to be administered face to face to head of households (later also including spouse). The household sanitation survey was carried out in 46 districts, where the NSC was implemented at time of the evaluation which form the 14 regions of the National Sanitation Campaign Process Evaluation Survey in Tanzania Mainland (the regions include Dodoma, Arusha, Tanga, Pwani, Mtwara, Iringa, Tabora, Rukwa, Kigoma, Kagera, Mara, Manyara Njombe and Katavi regions). The survey was representative of the Districts where the evaluation took place.

Sampling

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The sampling frame used for 2014 Process Evaluation Household Survey was the 2012 Tanzania Population and Housing Census (PHC 2012), which was conducted in Tanzania in 2012. Each Enumeration Area (EA) appears with identification information, administrative belongings and a measure of size, which is the number of residential households residing in the EA. Each EA is also classified into one of the two types of residence, urban or rural. Each EA has companied cartographical materials, which delineate its geographical locations, boundaries, main access and land marks in or outside the EA which helps to identify the EAs. According to the 2012 PHC, Tanzania Mainland is divided into Regions; each Region is sub-divided into Districts. There are in total 14 regions and 48 districts in the frame of 2014 National Sanitation Campaign Process Evaluation Household Survey.

Table 1, below, shows the distribution of population by region as summarized from the sampling frame after excluding the institutional EAs. The shares go from 11.9% for Kagera to 1.8% for Katavi. Overall, the frame has a population of 20,461,858 and a total of 4,333,770 households.

Table III-1: Distribution of Residential Households by Region and According to Type of Residence

Region	Population	Households				
	Number	Households			Percentage Distribution	
		Urban	Rural	Total	Urban	Region
Dodoma	1,973,847	72,556	376,850	449,406	16.1%	10.4%
Arusha	1,475,290	122,345	235,074	357,419	34.2%	8.2%
Tanga	2,017,254	96,325	338,708	435,033	22.1%	10.0%
Pwani	1,066,654	83,359	170,310	253,669	32.9%	5.9%
Mtwara	1,247,576	76,997	264,559	341,556	22.5%	7.9%
Iringa	918,470	60,720	159,511	220,231	27.6%	5.1%
Tabora	2,170,516	62,649	305,299	367,948	17.0%	8.5%
Rukwa	987,703	49,269	148,581	197,850	24.9%	4.6%
Kigoma	1,973,828	70,842	297,386	368,228	19.2%	8.5%
Kagera	2,407,781	54,870	462,167	517,037	10.6%	11.9%
Mara	1,700,530	59,756	247,222	306,978	19.5%	7.1%
Manyara	1,404,094	42,664	227,923	270,587	15.8%	6.2%
Njombe	688,302	40,059	128,542	168,601	23.8%	3.9%
Katavi	430,013	20,243	58,984	79,227	25.6%	1.8%
Total	**20,461,858**	**912,654**	**3,421,116**	**4,333,770**	**21.1%**	**100.0%**

*Source: Residential households, 2012 population census, Tanzania

Table III-2, below, shows the distribution of EAs and their average size in number of households after excluding institutional EAs in target survey area. Among the 51,139 EAs, 9,729 EAs are in urban areas and 41,410 EAs are in Rural Areas. The average size of the EAs is slightly higher for urban areas (94 EAs) and slightly lower in rural areas (83). It can be seen that the overall average number of households per EA is 85.

Table III-2: Distribution of EAs and their average size in number of households by Region and according to type of residence

Region	Number of EAs			Average EA size in # of HH		
	Urban	Rural	Total	Urban	Rural	Total
Dodoma	621	4,170	4,791	117	90	94
Arusha	909	2,200	3,109	135	107	115
Tanga	905	3,599	4,504	106	94	97
Pwani	911	1,922	2,833	92	89	90
Mtwara	812	2,979	3,791	95	89	90
Iringa	580	1,621	2,201	105	98	100
Tabora	1,026	4,859	5,885	61	63	63
Rukwa	815	2,152	2,967	60	69	67
Kigoma	870	3,818	4,688	81	78	79
Kagera	733	6,907	7,640	75	67	68
Mara	550	2,732	3,282	109	90	94
Manyara	357	2,218	2,575	120	103	105
Njombe	367	1,455	1,822	109	88	93
Katavi	273	778	1,051	74	76	75
Total	**9,729**	**41,410**	**51,139**	**94**	**83**	**85**

***Source: Residential Households and EAs, 2012 PHC, Tanzania**

Following the selection of the sample EAs at the first sampling stage, a new listing of households was conducted in each sample EA. At the second sampling stage 8 households will be selected from each sample EA.

To increase the efficiency of the sample design for the 2014 Household Survey, we divided the sampling frame of EAs into strata that are as homogeneous as possible. The first stage sample selection is carried out independently within each explicit stratum. The nature of the stratification depends on the most important characteristics to be measured in the survey, as well as the domains of analysis; the strata should be consistent with the geographic disaggregation to be used in the survey sampling tables. The EAs within each domain were ordered by geography (district, ward, village/Mtaa and cluster type) that are correlated with key survey variables, in order to provide further implicit stratification when systematic selection is used.

The first level of stratification corresponds to the geographic domains of analysis defined for the Sanitation survey (i.e district level representation). This level is also treated as explicit stratum for 2014 Household Survey for the calculation of sampling errors for estimates of key indicators. Furthermore, the EAs in the frame for each district were ordered to provide an implicit stratification by geography. Given that the sample EAs will be selected systematically with probability proportional to size (PPS) method, this ordering of the sampling frame will also automatically provide a proportional allocation of the sample EAs to each geography based on the total number of households in the frame. Before PPS, the EAs were ordered by district, ward, village/Mtaa and EA codes to ensure that the sample is geographically representative. A sample of 12 Enumeration Areas (EA) was selected using probability proportions to size from each district. In total, 576 EAs were selected for this survey.

Since when the process evaluation was designed and implemented the NSC did not cover the entire country but only selected districts in the 14 regions, the sample size was calculated based on 51, 139 EAs, found the regions where the NSC was implemented. The indicators for the calculation of the sample size were derived from the Tanzania 2011/12 Household Budget Survey (2011/12 HBS). Initially two indicators were considered; Improved Source of Drinking Water and Improved Toilet Facilities. The second indicator, the proportion of HHs with improved toilet facilities was used to calculate sample size. Using regional estimates from the national 2011/12 HBS data, total population and the number of HHs per region, the minimum number of EAs and HHs per cluster was estimated while maintaining a minimum possible relative standard error. Since our clusters are of different sizes, the sampling procedure of probability proportional to size (PPS) was applied as shown in Table III-3. With these estimates, the proposed number of EAs and HHs per district was 12 and 8 respectively taking into consideration factors like time and personnel to be involved in data collection activities. The survey is expected to interview 4,608 households as shown in Table III-3, below.

Table III-3: Sample allocation to Districts and Regions Covered by NSC

S/No.	REGION NAME	DISTRICTCODE	DISTRICT NAME	Sample EAs	Sample Households	Total Households to Interview
1	Dodoma	01	Kondoa	12	8	96
2	Dodoma	02	Mpwapwa	12	8	96
3	Dodoma	03	Kongwa	12	8	96
4	Dodoma	05	Dodoma Mjini	12	8	96
5	Dodoma	07	Chemba	12	8	96
Sub-total Dodoma				**60**		**480**
6	Arusha	02	Meru	12	8	96

S/No.	REGION NAME	DISTRICTCODE	DISTRICT NAME	Sample EAs	Sample Households	Total Households to Interview
7	Arusha	04	Karatu	12	8	96
8	Arusha	05	Ngorongoro	12	8	96
9	Arusha	07	Longido	12	8	96
Sub-total Arusha				**48**		**384**
10	Tanga	02	Korogwe	12	8	96
11	Tanga	06	Handeni	12	8	96
12	Tanga	08	Mkinga	12	8	96
13	Tanga	09	Korogwe Mjini	12	8	96
Sub-total Tanga				**48**		**384**
14	Pwani	01	Bagamoyo	12	8	96
15	Pwani	02	Kibaha	12	8	96
16	Pwani	04	Mkuranga	12	8	96
17	Pwani	05	Rufiji	12	8	96
Sub-total Pwani				**48**		**384**
18	Mtwara	01	Mtwara Vijijini	12	8	96
19	Mtwara	02	Newala	12	8	96
20	Mtwara	03	Masasi	12	8	96
21	Mtwara	04	Tandahimba	12	8	96
Sub-total Mtwara				**48**		**384**
22	Iringa	01	Iringa	12	8	96
23	Iringa	02	Mufindi	12	8	96
24	Iringa	05	Mafinga Mji	12	8	96
Sub-total Iringa				**36**		**288**
25	Tabora	02	Igunga	12	8	96
Sub-total Iringa				**12**		**96**
26	Rukwa	02	Sumbawanga	12	8	96
27	Rukwa	03	Nkasi	12	8	96
Sub-total Rukwa				**24**		**192**
28	Kigoma	01	Kibondo	12	8	96
29	Kigoma	02	Kasulu	12	8	96
30	Kigoma	04	Kigoma Manispaa	12	8	96
31	Kigoma	05	Uvinza	12	8	96
Sub-total Kigoma				**48**		**384**
32	Kagera	01	Karagwe	12	8	96
33	Kagera	08	Kyerwa	12	8	96
Sub-total Kagera				**24**		**192**
34	Mara	01	Tarime	12	8	96
35	Mara	03	Musoma	12	8	96
36	Mara	04	Bunda	12	8	96
37	Mara	06	Rorya	12	8	96
38	Mara	07	Butiama	12	8	96
Sub-total Kagera				**60**		**480**
39	Manyara	01	Babati	12	8	96
40	Manyara	02	Hanang	12	8	96
41	Manyara	03	Mbulu	12	8	96
42	Manyara	04	Simanjiro	12	8	96
43	Manyara	05	Kiteto	12	8	96
Sub-total Manyara				**60**		**480**
44	Njombe	02	Wang'ing'ombe	12	8	96
45	Njombe	03	Makete	12	8	96

S/No.	REGION NAME	DISTRICTCODE	DISTRICT NAME	Sample EAs	Sample Households	Total Households to Interview
46	Njombe	04	Njombe	12	8	96
Sub-total Njombe				**36**		**288**
47	Katavi	01	Mpanda Mji	12	8	96
48	Katavi	02	Mpanda	12	8	96
Sub-total Katavi				**24**		**192**
TOTAL NSC Sample				**576**		**4,608**

The availability of EA inventory from the 2012 Population and Housing Census enabled the selection of required number of EAs in each domain for both Tanzania Mainland. The list and maps of selected EAs were provided.

The MoHSW conducted the listing exercise for all households in the selected EAs. The listing exercise will involve field teams systematically moving through each and every EA and listing the household heads, household size and other relevant variables (if any). The listing of households should follow a serpentine approach (see Figure 4-1 below). After the completion of the listing exercise, the supervisor selected a total of 8 households from each selected EA using a systematic procedure. The 8 households were to be selected using a serpentine approach. Having listed all the households the skip interval was calculated as follows:

EXAMPLE:

- 80 listed households in EA
- 80 households ÷ 8 households to be selected = 10 (skip interval)
- Approaching the EA at a particular point/direction (e.g. bottom left), a random starting point (e.g. 2) is selected between 1 and 10 (skip interval). The random starting point is the first household of the 8 households to be selected. Using the skip interval (e.g. 10), the remaining 7 households to be surveyed in the EA are selected. A serpentine approach must be used to select the households to form part of the survey, which is illustrated in Figure III-1 below:-

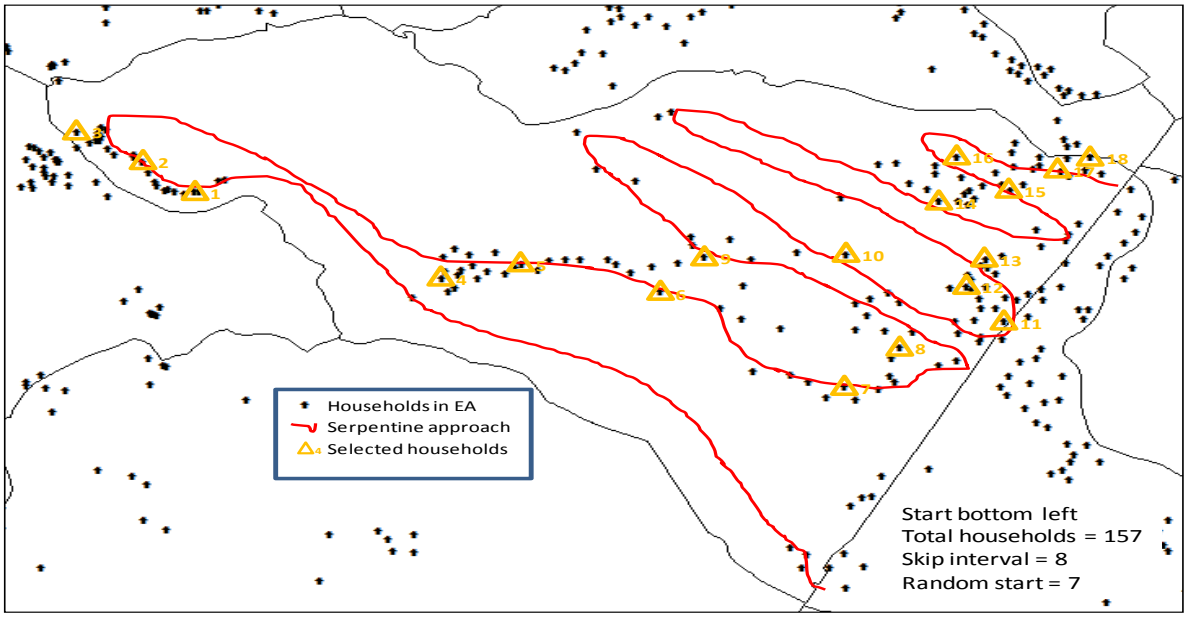

Figure III-1: Illustrative example of data collection

Due to the non-proportional allocation of the sample to the different districts and to their regions and the possible differences in response rates, sampling weights was required for any analysis using

Sanitation Survey data to ensure the actual representative of the survey results at district level. Since the Sanitation Survey sample is a two-stage stratified cluster sample, sampling weights will be calculated based on sampling probabilities separately for each sampling stage and for each cluster. We use the following notations:

P_{1hi}: first-stage sampling probability of the i^{th} EA in district (stratum) h
P_{2hi}: second -stage sampling probability within the i^{th} EA (household selection)

Let a_h be the number of EAs selected in district (stratum) h, M_{hi} the total population according to the sampling frame in the i^{th} EA, and $\sum M_{hi}$ the total population in the district (stratum) h. The probability of selecting the i^{th} EA is calculated as follows:

$$P_{1hi} = \frac{a_h M_{hi}}{\sum M_{hi}}$$

Let L_{hi} be the number of households listed in the household listing operation in the cluster i in district (stratum) h, let g_{hi} be the number of households selected in the cluster. The second stage's selection probability for each household in the cluster is calculated as follows:

$$P_{2hi} = \frac{g_{hi}}{L_{hi}}$$

The overall selection probability of each household in cluster i of stratum h is therefore the product of the two stages of selection probabilities:

$$P_{hi} = P_{1hi} \times P_{2hi} = \frac{a_h M_{hi}}{\sum M_{hi}} \times \frac{g_{hi}}{L_{hi}}$$

The design weight for each household in cluster i of district (stratum) h is the inverse of its overall selection probability:

$$W_{hi} = \frac{1}{P_{hi}}$$

A spreadsheet containing all sampling parameters and selection probabilities will be prepared to facilitate the calculation of the design weights. Design weights will be adjusted for household non-response.

Variance Calculation

Variance is change from a variable to another, it depends on:

a) The sample size
b) The actual variance for all the population units
c) the sample design

The variance for a number of variables will be calculated using SPSS program. The factors to be calculated will include:

a) An estimate
b) Standard error
c) Coefficient of variance (CV)= $cv_{(\bar{y})} = \frac{se_{(\bar{y})} \times 100\%}{\bar{y}}$

d) 95% confidence interval = $\bar{y} \pm t \times se(\bar{y})$

e) Design Effect (DEFF)

School WASH Component

A cross-sectional study was designed, and based on an existing monitoring report, 84 schools where sanitation improvements have been made or were ongoing were identified in the targeted districts where the NSC was implemented at household level. The sampling frame were schools where these sanitation improvements have been completed. Seventy schools that satisfied these inclusion criteria were then purposively selected for the study evaluation.

Enabling Environment

Interviews with key informants from all the Regions and Districts involved in the Campaign were administered. These were officers Health and Education officers from all those Districts and Regions which implemented the NSC at the time of the process evaluation. Table III-4 below presents the sample frame for the key informant interviews.

Table III-4: Key informant interviews sample

Key informants	Target	Achieved
Region Health Officers (RHO)	14`	14
Region Education Officers (REO)	14	14
District Health Officers (DHO)	47	43
District Education Officers (REO)	47	40

Data Collection

Four data collection tools, designed by the SHARE consortium, were reviewed jointly by all project partners through workshops which were held in Tanzania throughout 2013. The review process entailed checking the contents of the questions against objectives and then consideration of translation from English to Kiswahili. Each single question was reviewed by a group of bilingual native Swahili speakers along with the SHARE team who was responsible for providing guidance regarding the validity of questions in testing intended hypothesis.

Translation of the English version of the questionnaires was conducted in two stages. First stage translation (and back translation) of the finalised data collection tools (from English to Kiswahili) was done by NIMR staff. The draft Kiswahili translated tools were then shared and discussed in a workshop with the MoHSW to produce final agreed tools. Translated tools were programmed into ODK data collection software using Android Smartphone. Programming of ODK was conducted by NIMR Information Technology experts, with technical personnel from the MoHSW.

Data collection teams and training

The Data collection team was organised into three groups:

- Central coordination team which was composed of members from MoHSW (Mr. Elias Chinamo – Co-Principle Investigator), Hamisi Malebo from NIMR (Senior Research Scientist), Mrs. Sylvia Meku (Senior Statistician – Responsible for sampling) from NBS, Mrs. Irene Mremi (Information Technology Expert) and Filemon Tenu (Statistician) from NIMR.

- Field supervisors, these involved technical personnel (including scientists and technical staff) from MoHSW, NIMR, and NBS with capacity to conduct research evaluation and supervise field teams. This group included members of the research technical team and additional personnel from the MoHSW.
- Enumerators. These played the main role as frontline data collectors, responsible for household survey delivery. Enumerators, selected by NIMR were high school leavers or university graduates previously training or field research experience of working with ODK software from previous research projects.

The training of field enumerators was conducted by the Coordination team during a 5-day workshop organised at Edema Conference Hall in Morogoro in July 2013. The activity was split into two sub-sections; one day orientation of supervisors and four days training of data collectors. It included general orientation of study team about the objectives and main protocols for process evaluation, ethical requirements in conducting the study, understanding of field tools to be used, and planning for fieldwork.

Piloting

The household survey questionnaire was piloted by the MoHSW, NIMR and NBS in rural communities of Morogoro region in July 2013. Rural Morogoro, (Mikese village) presents similar conditions of those were the National Sanitation Campaign was implemented. Piloting was conducted by the actual team that collected data in the field. The questionnaire sections that needed correction were noted in the field and changed during plenary session. Proposed corrections were adopted after discussion and approval by a joint meeting of expert and field enumerators from MoHSW. Piloting of tools also included observations concerning performance of ODK installed Android Smartphones.

Data Analysis

This Section outlines analysis conducted in the process evaluation, discussing the main challenges encountered and reasons for deviating from the original protocol.

Household Survey

The majority of the evaluation questions listed in Section 3 were addressed through a cross-sectional survey of households in areas targeted by the NSC. As a single cross-sectional survey, it provides only limited information in key variables related to the campaign. However the results will serve as an adequacy evaluation, assessing whether target levels of determinant conditions and critical outcomes. We planned to compare our results to other statistical comparators, including the NSC baseline, DHS surveys and (if available) the 2012 census, however the use of different methodologies and weighting system made this comparison not possible.

The household survey collects information on a range of household and individual variables. These are grouped into the following categories: socio-demographics, NSC activities, behavioural determinants, WASH behaviours, WASH conditions, sanitation improvement outcomes, and social modifying factors. These categories correspond to the evaluation's conceptual framework and key evaluation questions.
For all domains, individual variables are reported in the descriptive analysis. For example:
Socio-demographics: These Are: Gender (B1), Age (B2), Education (B3), Relationship to head of HH (B4), Marital status (B5), Years lived in community (B6), Cumulative months away from HH (B7), Occupation, (B8), Number of HH members (C1) and number of children under 5 (C2).

Sanitation Facility[12]

- Sanitation facility (D8, OB1-OB10) (also create a dichotomous variable for improved sanitation source, WAT_IMP)
- Sanitation sharing (D11-D13)
- Sanitation maintenance (D14)
- Sanitation conditions (OB10-OB15)

Drinking Water Source[13]

- Water source type (D5) (also create a dichotomous variable for improved source, WAT_IMP)
- Water source distance (D6) (also create a dichotomous variable for distance greater than the media, WAT_FAR)
- Water treatment (D7)

Handwashing

- Handwashing facilities (OB18-OB19) (individually reported but converted to dichotomous variable for handwashing facility with soap and water, HW_FAC)

Sanitation improvement outcomes

- Recent toilet (built in last year) (D19)
- Started new toilet (D25)
- Recent improvement (last year) (D20 and D17-18)
- Plan to improve (D21-D22)
- Saving to improve (D23)
- Purchase to improve (D24
- Combined measure of household taking action to improve (dichotomous variable based on any of the above improvements, ANY_SAN_IMP)
- Main barriers to improvement (D26)
- Family or friends improved their toilets (C32-C33)
- Cost to build the latrine (D16)

Social modifying factors

- Tenure status (D1)
- Social networks (participation in meetings, K10)
- Access to media (B9-B11) (factor score)
- Financial networks (F1-F2)
- Residence stability (B6 and B7)
- Household decision-making (G1-G3) (factor score)

For the behavioural determinants the original protocol planned to derive aggregate variables, to capture the underlying concepts. For example, several questions are asked regarding social norms around open defecation. The responses to the individual questions are reported. Whether possible

[12] This Survey employed the JMP definition of Improved Sanitation facility: a facility that hygienically separates human excreta from human contact (http://www.wssinfo.org/definitions-methods/). The JMP identifies the following types of sanitation as improved: Flush toilet; Piped sewer system; Septic tank; Flush/pour flush to pit latrine; Ventilated improved pit latrine (VIP); Pit latrine with slab; Composting toilet.

[13] The survey employed the JMP definition of improved drinking-water source as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter (http://www.wssinfo.org/definitions-methods/). The following are considered improved drinking water sources: Piped water into dwelling; Piped water to yard/plot; Public tap or standpipe; Tubewell or borehole; Protected dug well; Protected spring; Rainwater.

the original plan was to generate a multi-item index to capture the latent (unmeasured) variable representing likely open defecation norms.
The following aggregate measures were supposed to be used in a factor analysis and assessed for internal consistency using Cronbach's alphas as the statistical test.

Examples of proposed analysis for behavioural determinants.

- Outcome expectation (H1-H4) (individual and factor score)
- Social norms (regarding improved toilets H5-H6) (regarding open defecation I5-I7) (individual and factor score)
- Threat severity (H7-H10) (individual and factor score)
- Skills (J1-J3) (individual and factor)
- Affordability (J4-J6) (individual and factor score)
- Decision control (G1-G3)
- Message exposure (B12)

However we were unable to generate multi-item indexes due to changes to the questionnaire design, which were beyond the control of evaluators. These changes are illustrated in Annex IV-Study Limitations.

School WASH

Data were analysed using STATA 13 (StataCorp LP, College Station, USA). Descriptive statistics including means and proportions were used to assess the availability and adequacy of the environmental/WASH conditions and the enabling environment. Descriptive statistics were also used to describe the institutional relationships and activities within the external enabling environments, and to also provide a basis for overall assessment of functioning and barriers in each of the four areas and how it affected the level of implementation of school WASH and household improved sanitation at the district level. All multiple responses were analysed using Stata's command 'mrtab', especially for responses that were not already treated as separate variables in the questionnaire. The association between categorical exposures and outcomes (for example toilet technology type and toilet cleanliness) was assessed using Pearson Chi-square test.

Enabling environment

One of the objectives of this evaluation was to interpret the findings in the context of this broader environment. In particular, how do institutional arrangements facilitate or constrain the NSC.

For the purpose of this evaluation, this was done as a two-stage process. We documented the process of institutional arrangements and activities that characterises roles and relationships among different institutions. This was done through content analysis of WSDP documents and MoHSW reports and interviews with key informants.

The second step was to understand potential barriers, dependencies, and delays that have occurred within this context. This will also be done through the review of the WSDP programme documents and MoHSW monitoring forms and discussions with key informants. The purpose of this portion of the evaluation is to identify potential strategies or steps that have been done or could be done to increase the efficiency of the campaign.

Annex IV: Study limitations

In Annex IV we report the main challenges encountered in the execution of the process evaluation, which affected the execution of the original analysis plan of the evaluation.

Challenges with Household Questionnaire Design

As indicated in Section 4.4 on the original analysis protocol could not be followed entirely, as after the piloting of the household survey questionnaire, several questions were removed by the MoHSW and NIMR, without consulting all PIs in the project, making it impossible to conduct some of the planned analysis. The following Table IV-1 highlights the questions and sections that were removed from the original questionnaire, after piloting.

Table IV-1: Sections and questions removed after the piloting of the household survey questionnaire

Section	Question removed	Implication for analysis
Wealth Index	**C5:** What type of fuel does your household mainly use for cooking? **C6:** What is the main source of energy for lighting in your household **E1:** Does this household own any livestock, herds other farm animals, or poultry? **E2:** How many of the following animals does this household own?	The removal of these questions had implications for calculating the wealth quintile index.
Sanitation maintenance	Have you or anyone else ever emptied the pit in this latrine? Who usually empties the latrine?	Removing these questions made it difficult to explore some aspects of sanitation behaviour
Social Norms: Subjective norms	**L1:** What are the most important factors in having an improved toilet? **L2:** Using an improved toilet is good for my health and that of my FAMILY **L3:** Using an improved toilet is good for my safety and that of my family **L4:** Building an improved toilet would save money for my family. **L5:** My friends believe we should have an improved toilet. **L6:** My partner believes we should have an improved toilet. **L7:** My family members believe we should have an improved toilet.	Removing this questions made it impossible to create an aggregate measure for social norms, as we did not have all the questions, which were part of our assumptions.
Complementary food hygiene (AA2-AA7)	**AA1:** Other than breast milk what did they have for breakfast today? **AA2:** Other than breast milk what did they have for their evening meal yesterday? **AA3:** When do you prepare the food for the evening meal? **AA4;** Where do you store the evening meal between preparation and feeding? **AA5:** Is the container covered?	We were not able to assess whether the campaign targeted this behaviour, due to removal of these questions by the piloting team.
Financial network	Did you or anyone in your household use any of the following services to transfer money over the last 12 months: Is anyone in the household a member of a savings group (SACCOS)?	There are not enough questions on decision control to create an aggregate measure.

Decision Making within household	Who usually makes decisions about making improvements in your household? Who usually makes decisions about visits to your family or relatives?	There are not enough questions on decision control to create an aggregate measure.
Family or friends improved their toilets (C32-C33)	During the last year have any of your friends or neighbours improved their toilet? What improvements did they make?	This did not allow us to explore influences of neighbours on toilets construction.
Food security (D1-D3)		The entire section was removed.
Observations of Handwashing Facility	Question OB 20 - on distance of HWF from toilet was coded wrong in the phones. It was coded as distance from HH station from kitchen.	The answers to this question were not considered

Use of mobile phones to administer the Household Sanitation Survey

Several challenges were identified with the use of mobile phones for data collection. These were the following:

1. The skip patterns prepared in the soft copy of the questionnaire were not inputted correctly in the Android phones. This created a problem for enumerators in the field as they could not skip unwanted questions and had proceed with providing some sort of answers to be able to complete and send off the survey. One example of skip pattern mistake is question D8: If the respondent replied the household does not have a toilet (D8) the interviewer could not skip to the next suitable question (D20).
2. Some of the questions were missing from the phone, i.e. Observation 5 on the status of repair of slab.
3. Some of the questions could be skipped from the questionnaire without being answered. See OB18 on Handwashing facilities.
4. Problems with EA/District/Region numbering. Numbering of EAs, District and Region were not provided as drop-down menu, but they were entered manually by enumerators. As a results several EAs and District number were missing, erroneously entered by enumerators, making difficult to trace to which EA the questionnaire belonged.
5. GPS data recording was optional on the phones, thus it was difficult to allocate the case when there were mistaken in the EAs, districts and regions numbers.
6. More than 200 questionnaires were not uploaded to the ODK database. As results they had to be manually uploaded, creating delays in data cleaning and analysis.

Challenges with the Community Questionnaire

The Community questionnaire was designed to be administered to village leaders of the selected EAs, so that community conditions gauged could be linked to responses from households. Three main issues occurred in the execution of the community survey, which ultimately forced the researchers to write off the entire dataset:

1. In several instances, two leadership representatives were interviewed within the same village area, providing contrasting responses, which made it impossible for the researchers to choose the appropriate questionnaire without bias.
2. Repeated human errors in inputting the right EAs code corresponding to the community surveyed made impossible to link the community with the household survey, critically compromising the original data analysis plan.
3. Missing questionnaires. Several questionnaire were not uploaded to the server and could not be found in the smart phone, generating more than 100 cases of missing data.

Challenges with Key Informants interviews

Four separate semi-structured questionnaires were designed for four groups of key informants, namely Regional Health Officers, Regional Education Officers, District Health Officer and District Education Officers. However, the questionnaires were imputed on the phones as one unique form. This meant that the interviewer had to go through all three other questionnaires to be able to complete the survey and send it to the server. As a result, all the key informant interview data set had to be written off and all interviews had to be repeated from February to April 2015.

Financial challenges encountered by MoHSW

The MoHSW reported the following challenges encountered in the household data collection process:

1. Delay in disbursement of funds for household survey: Funds for the process evaluation were disbursed late, so that the data collection did not start as planned. If funds were released on time, the process evaluation would have started in August 2013 and finished in October 2013. However, the exercise began one year later in August 2014 and was completed in November 2014. Since funds allocated for it were released at the end of the year causing the Ministry of Finance (MoF) to deposit in the holding account, the evaluation was conducted using other funds that were allocated for implementation of other priority activities.
2. Unforeseen data collection costs: Throughout the whole process from preparations for field work and actual field work a number of issues emerged that needed additional funding. These unforeseen costs and subsequent budget deficit led to splitting of the exercise into two phases. In that arrangement phase I was funded through NSC while phase two was carried out under financial support of SHARE.

Logistic Challenges

1. Some EAs and households within EAs were so scattered that data collection teams had to hire a bicycle or a motorcycle to reach them, the costs that were not included in the budget. Similarly, some EAs and household were located in hard to reach areas where no car, motorcycle or bicycle could be used. In situation like this, the exercise took extra days to complete. These costs would have been addressed if there was a budget contingency.
2. During the second data collection phase in November 2014, some EAs could not be reached due to the leadership election process. By the time phase II was being conducted, all villages were in election process and that all chairpersons were retired. A retired Sub village Chair is restricted from doing any government assignment. In some areas like Katavi, the Ward Executive Chairs and Village Executive Chair restricted the data collection in one sub village. For same reason, one EA was left out in Mpanda DC, within Katavi Region.

Annex V: Further Results from Household Survey

Age		
Median age of respondent (IQR)	**40** (30-54)	
	n	% (95% CI)
15-19yrs	117	3.91 (2.9 ,5.2)
20-24yrs	319	8.06 (6.52 ,9.9)
25-29yrs	414	10.51 (9.2 ,11.9)
30-34yrs	446	10.6 (9.2,12.2)
35-39yrs	574	13.51 (11.9,15.2)
40-44yrs	472	11.02 (9.5,12.8)
45-49yrs	401	9.68 (8.4,11.2)
50-54yrs	361	9.32 (7.9 ,10.98)
55-59yrs	210	5.59 (4.5 ,6.9)
60-64yrs	215	5.59 (4.3 ,7.2)
65-69yrs	151	3.56 (2.8 ,4.6)
70-74yrs	135	3.67 (2.9,4.7)
75-79yrs	77	2.09 (1.5,2.99)
80+	96	1.74 (1.3,2.4)
unknown	83	1.16 (0.9,1.6)

Education-level of respondant		
	n	**% (95% CI)**
Primary School	2,722	67.44 (64.9, 69.9)
Secondary School	270	7.36 (5.9, 9.0)
College	36	1.48 (0.8, 2.8)
University	7	0.2 (0.1, 0.4)
None	1,033	23.6 (21.3 ,26.1)

Respondent HH position		
	n	% (95% CI)
Head	2,423	58.4 (55.4, 61.3)
Spouse	1,261	31.4 (29.3, 33.5)
Son/daughter	290	7.8 (6.3 ,9.7)
Mother/Father	20	0.4 (0.2,0.7)
Parent of HH head	26	1.0 (0.6,1.9)
other relative	49	1.0 (0.7,1.4)
Another	2	0.03 (0,0.2)

Marital Status	n	% (95% CI)
Monogamous married	2,680	66.8 (64.3, 69.2)
Polygamous married	399	9.8 (8.3, 11.5)
Living together	142	3.9 (3.1, 4.9)
Separated	144	3.1 (2.4, 4.0)
Divorced	37	0.7 (0.5, 1.0)
Never married (man)	124	3.4 (2.5, 4.6)
Never married (woman)	133	3.7 (2.7, 4.9)
Widow (female)	367	7.8 (6.3, 9.8)
Widow (male)	45	0.8 (0.6, 1.2)

Occupation		
	n	% (95% CI)
Agriculture/livestock	3,348	82.4 (79.1,85.3)
Fishing	42	0.8 (0.45 ,1.2)
Mining	12	0.4 (0.2,0.9)
Government	63	1.51 (1.01 ,2.3)
Parastatal	4	0.1 (0.03 ,0.3)
Private sector	22	0.6 (0.3, 1.1)
NGOs/Faith based organisations	11	0.3 (0.1, 0.6)
Self-employed with employees	34	1.3 (0.52 ,3)
Self-employed without employees	326	6.9 (5.6 ,8.6)
Unpaid family work	14	0.5 (0.2,1.32)
Paid family work	5	0.1 (0.1,0.3)
Job Seeker	46	2.5 (1.4 ,4.5)
Student	144	2.7 (2.1 ,3.5)

Observed latrine type																									
		Improved														Unimproved									
Region Name	District Name	Flush/pour flush to piped sewer system		Flush/pour flush to piped septic tank		Flush/pour flush to pit latrine		Ventilated improved pit latrine		Improved pit latrine		Composting toilet/ EcoSan		Total Improved n (weighted %)		Traditional Pit latrine		Flush/pour flush to elsewhere		No toilet		Total Unimproved n (weighted %)	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Total		**67**	**1.1**	**41**	**1.1**	**226**	**5.1**	**115**	**3.1**	**641**	**14.3**	**3**	**0.08**	**1,093**	**24.8**	**2,347**	**57.3**	**10**	**0.25**	**621**	**17.7**	**2978**	**75.2**
Dodoma	Kondoa			3	6.4			1	2.5	1	3.3			**5**	12.3	42	83.2			3	4.54	**45**	87.7
	Mpwapwa					1	1.04	2	2.08	1	1.04			**4**	4.2	84	87.5			8	8.3	**92**	95.8
	Kongwa					2	2.78	1	1.04	6	6.9			**9**	10.8	56	74.6			10	14.68	**66**	89.24
	Dodoma MC			4	4.5	20	19.9			10	10.1			**34**	34.5	53	54			11	11.5	**64**	65.5
	Chemba					2	2.08			5	5.21			**7**	7.3	79	82.3			10	10.4	**89**	92.7
Arusha	Meru	1	1.1			8	8.4	15	15.8	41	43.46			**65**	68.7	28	30.2			1	1.1	**29**	31.28
	Karatu									8	8.33			**8**	8.3	72	76.0			15	15.6	**87**	91.67
	Ngorongoro					1	1.04	2	2.1	2	2.08			**5**	5.21	5	5.21	1	1.04	85	88.54	**91**	94.79
	Longido					6	6.8	7	7.9	62	71.59	1	1.14	**76**	87.5	4	4.55	3	3.41	4	4.55	**11**	12.5
Tanga	Korogwe DC			4	4.8	14	21.4	4	5.95	12	14.3			**34**	46.4	32	47.6			3	5.9	**35**	53.6
	Handeni					7	10.6	1	1.27	14	26.5			**22**	38.4	36	59.6			1	2.03	**37**	61.61
	Mkinga					5	6.4	2	2.26	15	20.68			**22**	29.32	45	65.79			3	4.89	**48**	70.68
	Korogwe TC			1	2.56	11	16.67			15	21.37			**27**	40.6	38	52.99			5	6.4	**43**	59.4
Pwani	Bagamoyo			3	3.19	7	7.45			31	31.38			**41**	42.02	59	48.4			10	9.57	**69**	57.98
	Kibaha									8	7.72			**8**	7.72	47	61.67			24	30.61	**71**	92.28
	Mkuranga			1	1.04					14	14.88			**15**	15.92	39	38.41			46	45.66	**85**	84.08
	Rufiji							2	2.27	11	11.93			**13**	14.2	75	81.25			3	4.55	**78**	85.8
Mtwara	Mtwara DC	1	1.08	2	2.15	1	1.08	2	2.51	6	6.81			**12**	13.62	76	83.87			2	2.51	**78**	86.38
	Newala							2	2.08	2	2.1			**4**	4.16	80	84.4			11	11.44	**91**	95.84
	Masasi			1	1.04			3	3.13	8	8.3			**12**	12.5	68	69.79			17	17.71	**85**	87.5
	Tandahimba							2	2.08	3	3.1			**5**	5.21	85	87.5	1	1.04	6	6.25	**92**	94.79
Iringa	Iringa	6	6.6	1	1.04	5	5.9	1	1.39	11	11.95			**24**	26.88	65	69.64	1	1.39	2	2.08	**68**	73.12
	Mufindi	7	7.37			4	4.21	2	2.11	25	26.3			**38**	40	56	58.95			1	1.05	**57**	60
	Mafinga TC	35	37.05	2	2.08	15	15.63	2	2.08	23	24.1			**77**	80.95	15	15.92			3	3.13	**18**	19.05
Tabora	Igunga					1	1.04	1	1.04	12	12.5			**14**	14.58	65	68.45			16	16.96	**81**	85.42
Rukwa	Sumbawanga					15	15.96	2	2.13	8	8.5			**25**	26.6	62	65.96	2	2.13	5	5.32	**69**	73.4
	Nkasi					14	14.76			9	9.5			**23**	24.25	54	57.08			17	18.67	**71**	75.75
Kigoma	Kibondo			1	1.04					18	19.5			**19**	20.51	66	76.79			2	2.7	**68**	79.49
	Kasulu					2	2.			14	16.4	1	1.04	**17**	19.87	64	72.94			6	7.19	**70**	80.13
	Kigoma MC			8	9.5	9	9.76	3	3.36	11	12.6			**31**	35.18	52	58.26			6	6.56	**58**	64.82
	Uvinza					1	1.54			20	27.1			**21**	28.64	38	52.34			11	19.02	**49**	71.36
Kagera	Karagwe			2	2.9	4	5.24	3	4.3	4	5.1			**13**	17.54	30	39.78			32	42.68	**62**	82.46
	Kyerwa					1	1.05	2	3.16	6	8.42			**9**	12.63	63	68.12			18	19.25	**81**	87.37
Mara	Tarime							2	2.15	5	5.38			**7**	7.53	59	63.44			27	29.03	**86**	92.47
	Musoma	1	1.05	1	1.05	14	14.74	9	9.47	4	4.21			**29**	30.53	55	57.89			11	11.58	**66**	69.47
	Bunda					4	4.17	1	1.04	4	4.17			**9**	9.38	65	67.71			22	22.92	**87**	90.63
	Rorya	1	1.08			4	4.3	6	6.45	10	10.75			**21**	22.58	44	47.31			28	30.11	**72**	77.42
	Butiama	1	1.06	1	1.06	27	28.72	5	5.3	4	4.26			**38**	40.43	41	43.62			15	15.96	**56**	59.57
Manyara	Hanang			2	2.08			3	3.13	7	7.99			**12**	13.19	77	81.6			5	5.21	**82**	86.81
	Mbulu							3	3.13	21	21.88			**24**	25	51	53.13			21	21.88	**72**	75
	Simanjiro	3	3.26	4	4.13	5	5.22	15	15.4	37	39.57	1	1.09	**65**	68.7	16	17.17			13	14.1	**29**	31.3
	Kiteto							2	2.66	2	2.86			**4**	5.51	30	46.4			32	48.1	**62**	94.49
Njombe	Makete	3	2.81			1	1.05	2	1.99	26	27.37			**32**	33.2	59	61.52			5	5.26	**64**	66.78
	Njombe	8	8.33	1	1.04	3	3.13	1	1.04	73	76.04			**86**	89.58	8	8.33			2	2.08	**10**	10.42
Katavi	Mpanda TC					9	10.34	4	4.6	9	10.34			**22**	25.29	51	58.62			14	16.09	**65**	74.71
	Mpanda DC					2	2.13			3	3.19			**5**	5.32	58	62.26	2	2.13	29	30.29	**89**	94.68

Region Name	District Name	Hand Washing Facilities											
		Sink with tap		Plastic container with tap		Mobile bucket or basic		Tippy tap (locally made)		No handwashing facilities present		Observation not possible or data missing	
		n	%	n	%	n	%	n	%	n	%	n	%
Total		49	1.3	51	1.2	19	0.6	216	4.1	3,099	74.9	637	18.0
Dodoma	Kondoa			1	1.4			19	39.9	27	54.1	3	4.5
	Mpwapwa									86	89.6	10	10.4
	Kongwa							2	2.8	63	82.5	10	14.7
	Dodoma MC			2	1.67					85	86.9	11	11.5
	Chemba									86	89.58	10	10.4
Arusha	Meru									91	96.84	3	3.16
	Karatu							15	15.62	65	68.75	15	15.62
	Ngorongoro									10	10.42	86	89.58
	Longido	1	1.14							82	94.32	4	4.55
Tanga	Korogwe DC			1	1.19	1	2.38	1	1.19	63	89.29	3	5.95
	Handeni	1	2.54	2	4.24			13	21.37	42	69.82	1	2.03
	Mkinga			3	3.38	1	1.5	1	1.13	62	89.1	3	4.89
	Korogwe TC			1	1.28	4	5.98	1	1.28	59	85.04	5	6.41
Pwani	Bagamoyo			2	2.13	2	2.13	1	1.06	94	84.04	11	10.64
	Kibaha									54	68.06	25	31.94
	Mkuranga			2	2.08	1	1.04	1	1.04	50	50.17	46	45.66
	Rufiji			1	1.14			5	5.68	81	87.5	4	5.68
Mtwara	Mtwara DC									88	97.49	2	2.51
	Newala			1	1.04					83	87.52	11	11.44
	Masasi	1	1.04	3	3.13					73	75	20	20.83
	Tandahimba			1	1.04			1	1.04	88	90.74	7	7.18
Iringa	Iringa	2	2.08	6	6.4			21	24.01	58	62.15	5	5.36
	Mufindi	1	1.05	2	2.11	2	2.11	7	7.37	82	86.32	1	1.05
	Mafinga TC	28	29.76	11	11.61	2	2.08	1	1.04	50	52.38	3	3.13
Tabora	Igunga							4	4.17	75	78.87	16	16.96
Rukwa	Sumbawanga							7	7.45	82	87.23	5	5.32
	Nkasi			2	2.11			18	18.98	58	61.3	16	17.62
Kigoma	Kibondo							4	4.93	81	92.36	2	2.7
	Kasulu							2	2.08	79	90.72	6	7.19
	Kigoma MC	1	1.22	1	1.42	3	3.2			78	87.6	6	6.56
	Uvinza									59	80.98	11	19.02
Kagera	Karagwe	2	2.53	1	1.27	1	1.45			39	52.08	32	42.68
	Kyerwa							1	1.05	71	79.7	18	19.25
Mara	Tarime									66	70.97	27	29.03

	Musoma			1	1.05			4	4.21	79	83.16	11	11.58
	Bunda									74	77.08	22	22.92
	Rorya			1	1.08					64	68.82	28	30.11
	Butiama							3	3.19	73	77.66	18	19.15
Manyara	Hanang	1	1.04					1	1.39	87	92.36	5	5.21
	Mbulu	2	2.08					2	2.08	71	73.96	21	21.88
	Simanjiro	6	6.09			1	1.09			74	78.7	13	14.13
	Kiteto									34	51.88	32	48.12
Njombe	Makete	2	1.87			1	0.94	14	14.62	74	77.31	5	5.26
	Njombe	1	1.04	5	5.21			66	68.75	22	22.92	2	2.08
Katavi	Mpanda TC			1	1.15					74	85.06	12	13.79
	Mpanda DC							1	1.06	63	67.58	30	31.36